THE CHICAGO

MEDICAL JOURNAL.

VOL. II. NOVEMBER, 1859. No. 11.

ORIGINAL COMMUNICATIONS.

ARTICLE I.

A CASE OF COMPOUND PREGNANCY.

REPORTED BY DR. M. STAHL, OF HARTFORD CITY, IND.

Among the rare cases of obstetrics is the following, which occurred four miles from this place, to which I was called, in consultation with Dr. Clouser. Mrs. H., a respectable lady, was in her third utero-gestation, and enjoying her usual good health, when, on the 13th day of June, after a little more than ordinary exercise, she was taken sick. Natural labor pains came on, and in eight hours from the commencement of labor, she was delivered of a male child, weighing only three pounds. The nails, hair, adipose matter and muscular system were developed as at full term. The placenta and membranes immediately preceded the birth of the infant.

One child and secundines were now expelled, but the prominence of the abdomen being only partially reduced, suspicions were entertained of another fœtus in utero. Expecting pains soon to recur for the expulsion of the second fœtus, but being disappointed in this, an examination per vaginam was made, and the head of another fœtus could be pretty distinctly felt.

The os uteri did not appear soft and relaxing, but rather disposed to contract. There was some hemorrhage, but not alarming, as is sometimes the case in placenta prævia; still no labor pains recurred.

It being now about four hours after the delivery of the first child, and nothing but external means having been employed to bring on labor pains, we now gave a few doses of the vinum ergotæ, with a view of producing pains for the expulsion of the second fœtus, or to check the hemorrhage.

The second indication was sufficiently met, the first was not. I remained with the woman until evening, the child being born early in the morning. The woman doing well, but no pain. Dr. Clouser visited her next day; found her comfortable. She gathered strength rapidly; was up in a few days, and in two weeks, was able to do her work *as if all was over.*

She did not express any great anxiety of mind as to her condition, expecting in a few days to be delivered of another living child, for she was sensible of its motions in utero. Forty-eight days after the first child was born, on the first day of August, she was taken sick, and speedily delivered of a *fine, healthy, female child*, weighing about eight pounds; the mother kindly recovering and nursing both children.

She knew nothing definite as to the time of conception, for her menses had not been established since her second accouchement. Each fœtus had its placenta, and enveloped in separate membranes. If both were fecundated at the same time, I think the first was expelled before term; but from its proportionate development, and the descent of the testes into the scrotum, it must have been at least eight months old when parturition took place. This would give to the second eighteen days over the usual term of gestation. More depends upon the degree of perfection which the fœtal organs have attained for external existence than upon the period of pregnancy.

The children remain healthy; the second is still the largest. They are now over two years of age, having been born in 1857.

ARTICLE II.

BELLADONNA IN PREVENTING THE SECRETION OF MILK, AND IN MAMMARY ABSCESS.

(Read before the Aurora City Medical Association, at Aurora, Ill., Oct. 3, 1859.)

BY A. HARD, M. D.

There has been much said of late of the virtues of belladonna in preventing and arresting the secretion of milk; and having, with others, labored under the inconvenience of possessing no reliable remedy to fulfil such indications, I resolved to test its virtues; and I propose to give the result of its use in six cases, in which I have endeavored to give it a fair trial.

In the first three it was desirable to prevent the secretion of milk in one breast (from the entire want of development of the nipple) without interfering with the other. All three patients had previously suffered from mammary abscesses, and they looked forward to their approaching accouchment with "fear and trembling." Immediately after delivery I ordered the following:

℞ Ext. belladonna, ℈ij.
Aqua font., ℥ij.
Misce.

With this solution bathe the *one* breast every four hours, until the flow of milk is established in the other; then apply less frequently, but continue its use a week longer.

In one patient, there was no milk secreted in the breast thus treated, while the other breast afforded the usual amount and appeared unaffected. In the other two cases there was a little milk secreted, but not sufficient to distend the gland so as to produce inconvenience; while the opposite breasts, like that of the first case, performed their functions unimpaired The fourth was a case of premature delivery at the sixth month, as the result of placenta prævia. The solution of belladonna was applied to both breasts. But little milk was secreted, which was soon absorbed.

The fifth was a case of abortion. The belladonna was not applied until the breasts became distended and painful. I

ordered that the milk be drawn with a breast pump once; then applied the belladonna and had no further trouble.

In the last case, a large abscess had formed in one breast, which was discharging, and extensive swelling and inflammation existed in the other, at the time I was called. The patient had been a great sufferer for four weeks, both from the "cold water treatment" and the mammary inflammation. I applied the belladonna as in the other cases; also, warm fomentations; had the bowels moved by sulph. magnesia, and ordered the following:

℞ Sulph. quinine, grs. 15.
Pulv. opii, " 2.
Misce.
Div. in chart. No. 4. Dose, one every three hours.

Under this treatment suppuration was prevented, the inflammation was subdued, and convalescence soon followed. There was but little constitutional effect of belladonna perceptible. In two cases, the pupils of the eyes were a little dilated; the children were not effected by it. However, I took the precaution to guard against its inhalation either by the mother or child.

If belladonna proves as useful in the hands of others as it has in mine, in these unpleasant complications consequent upon child-bearing, a vast amount of pain and suffering will be mitigated, if not entirely prevented. I would call the attention of the association particularly, to its application to one breast, leaving the other undisturbed.

ARTICLE III.

REPORT OF CASES IN OPHTHALMIC PRACTICE.

BY E. L. HOLMES, M.D., OF CHICAGO.

CONGENITAL TUMOR ON THE CORNEA AND SCLEROTICA.

A young man, twenty-one years of age, in good health, called upon me regarding a singular congenital tumor, situated near the horizontal median line of the right eye, one half

resting on the external portion of cornea and the other half on the sclerotica. The growth was of a yellowish white color, like a half-ripe cherry, oval in form, half an inch long, a quarter wide, and projecting three-eighths of an inch above the surface of the eye. When the lids were closed, the tumor passed under the upper lid, and raised it to such an extent from the lower that the edges of the lids were not in apposition. The tumor possessed so little sensibility, that it could be grasped firmly between the thumb and finger without producing pain, by which means it was found to be closely attached to the cornea, but movable over the sclerotica. There was a slight strabismus, convergent with so much dimness of vision, that the eye was almost entirely useless. Still the patient experienced scarcely any inconvenience from the tumor, since he had become accustomed to its existence, and enjoyed excellent vision in the other eye. The aspect of the eye was very unpleasant, for which reason alone the patient wished the tumor removed.

The operation was exceedingly simple. After chloroform had been administered, the tumor was seized with a pair of small-toothed forceps as near the globe as possible, and removed by paring it from its seat with a small bistoury, leaving the walls of the eye of their normal thickness. Although the scleral portion of the tumor appeared somewhat movable, it was found impossible to *dissect* it from its bed. It was pared from the sclerotica as from the cornea, care being taken to leave the surface of the whole wound convex—uniform with that of the eye.

The wound healed, with scarcely a symptom of inflammation; —not a trace of it appeared on the healthy portion of the cornea. A few granulations formed in the centre of the wound, which were wholly removed by two or three applications of nitrate of silver. In three weeks cicatrization was complete, the two lateral hemispheres of the eye being perfectly symmetrical in form. As might have been anticipated, the cornea presented a dense opacity at the seat of the tumor; the portion of the cicatrix upon the sclerotica, however, is much less perceptible.

Although the operation was performed principally to satisfy the vanity of the patient, it has proved to be of decided advan-

tage to him. The strabismus has entirely disappeared, and vision in this eye has been constantly improving since the removal of the tumor,—a result, doubtless, to be explained by the fact, that images of objects are now formed in both eyes on corresponding portions of the retinæ.

The tumor, which resembled, in some respects, the small growths occasionally seen upon the sclerotica (pinguicula), was probably a lipoma, a full description of which can be found in the works of Desmarres and other authors.

I am indebted to Drs. Freer and Hunt for a microscopical examination of the tumor, which they found to be of a fibrous and fatty structure.

ACUTE IRITIS, WITH EXTRAVASATION OF BLOOD INTO THE INTERIOR CHAMBER.

A gentleman, about fifty years of age, was attacked with inflammation of the right eye. It was not till the fourth day that he was unable to attend to his usual business, when he sought the advice of his physician, Dr. Max Myers, of this city, who found the case of some interest, and kindly favored me with an opportunity of observing the disease through its course.

At my first visit (May 3), the eye presented the following appearances: the lids were considerably swollen; the conjunctiva of the globe extensively chemosed; the iris discolored and apparently œdematous; the pupil contracted and irregular; the aqueous humor quite turbid. The subjective symptoms were photophobia, dimness of vision, with pain in and around the eye, which last symptom, however, was much less severe than in similar cases that I have seen. The patient had already taken a full dose of pil. hyd., and had been subjected to a rigid diet; extract belladonna and warm fomentations of poppy leaves had been freely applied around the eye. It was, therefore, thought best simply to scarify the chemosed conjunctiva and substitute a solution of sulphate of atropine (gr. ij. aquæ ℥ ss.) for the belladonna.

The following morning (May 4) a singular and somewhat alarming symptom was observed. During the night, evidently while the patient was sleeping upon his right side, blood was

extravasated from the vessels of the iris in such quantities as to fill the temporal portion of the anterior chamber as far as the outer edge of the pupil. In this position it had coagulated and become jet black. In the erect position of the head, this coagulum, instead of settling to the lower portion of the anterior chamber, remained perpendicular. Pus in the anterior chamber (hypopium), as is well known, usually changes its position in the beginning, according to the direction in which the head is held. Although the chemosis had subsided, the eye was, in other respects, in a worse condition than before. The aqueous humor was more turbid; the iris apparently more discolored; vision almost completely destroyed, although the pupil was somewhat dilated; the globe presented that peculiar dark, livid red appearance so often seen in similar cases. The pain was not very severe.

It was thought best to subject the patient more decidedly to the influence of mercury. For this purpose a grain of calomel and an eighth of a grain of opium were given every hour; two leeches were applied to the side of the nose near the angle of the eye. The atropine was continued as previously directed. In the evening I saw the patient again, and found he had been sitting up all day. The lower portion of the anterior chamber was filled with black coagulated blood almost to the centre of the pupil.

The aspect of the eye was certainly peculiar. Full two-thirds of the anterior chamber was filled with these jet-black coagula, the level surface of the second forming a right angle, of course, with the perpendicular surface of the first. The prognosis, as regarded vision, was exceedingly unpromising. No change was made in the treatment except to order a little morphine, if the patient should need it to quiet pain or induce sleep.

The next day (May 5) the symptoms were more favorable. The patient had rested well; the pain was less; and the extravasation had not increased. The calomel was ordered to be taken every three hours when awake. During the three following days, there was a wonderful improvement in the condition of the eye. It was becoming less red and painful, and the pro-

cess of absorption was rapidly taking place. The calomel was now given only three times daily. Continued treatment in other respects as before. On May 18, patient was able to resume, to a certain extent, his business, although apprized of the danger resulting from exposure. At this time the coagula had entirely disappeared; the conjunctiva was only slightly congested; there was no pain. The dimness of vision, of which the patient complained, was probably caused by the dilatation of the pupil and by the turbid condition of the aqueous humor.

From this time there was a constant improvement in the appearance of the eye and in vision. The pupil resumed its normal size and movements, as soon as the atropine was omitted. In a few weeks the patient was able to perform all the duties of his profession without the least difficulty. The cure was perfect.

The case is of peculiar interest, not only as showing to what extent the eye can suffer from inflammation and yet recover, but also as being an example of extensive extravasation of blood into the anterior chamber in iritis. A small quantity of blood *with* pus is not unusual in this disease; but such large coagula without the least apparent trace of pus is quite rare.

(TO BE CONTINUED).

ARTICLE IV.

REPORT OF FIVE CASES OF EMPYEMA.

BY H. NOBLE, M.D., OF HEYWORTH, ILL.

Mr. President and Gentlemen:

At the time I was directed by the President to furnish and read a paper to the Society, I was treating a case of empyema, in which I was very much interested, and having my attention at that time drawn especially to that disease, I shall make it the subject of the following paper.

Empyema is a disease or consequence of disease of not very frequent occurrence in this country. (I speak from observation only).

During a practice of fourteen years, I have seen five cases only; and from inquiry made by me of my friends, I learn that it is at least as seldom met with by the most of them as it has been with me.

Dr. Thompson, in his article on Empyema, in the *Cyclopedia of Practical Medicine*, gives a table furnished by Dr. Davies, containing ten cases, from which I infer that the number of cases occurring to those celebrated physicians were not numerous.

This, however, does not detract from the interest physicians should feel in a disease, every case of which is of vital importance to the patient. There is, perhaps, no condition of the system produced by disease more completely hopeless without efficient aid than the one under consideration. Although the books mention cases which were cured by absorption, we can only expect to meet such cases like angel visits—most welcome but most rare.

Empyema is a consequence or result of a very serious disease, namely, inflammation of the pleura. The occurrence of effusion is not evidence of the subsidence of the inflammation; although, so far as I have observed, the inflammatory action has in each case been materially modified by it, requiring the subsequent treatment to be directed not so much to the pleuritis as the effusion.

Notwithstanding the unfavorable condition of the system in which empyema occurs—namely, a pretty general inflammation of the pleural cavity—all the cases are not necessarily fatal, a fair proportion recovering after an operation. For instance, Dr. Davies, in his table, given by Dr. Thompson, reports ten operations, of which eight were successful. Dr. Bell says the term "successful" is too often used by surgeons to designate the operations that have been regularly and completely performed without the patient sinking under them. Of the applicability of that remark to Dr. Davies' cases I know nothing, but as to the cases which I shall report, you can judge for yourselves.

The first case I saw of empyema was that of John Munson, 10 years of age, who was attacked with pleuritis in the spring

of 1838. The patient was not healthy, having been troubled with asthma from infancy. In the third week of his disease effusion took place in his left side. Immediately after the occurrence of the effusion, the inflammatory symptoms subsided; the pulse, which had been from 120 to 140, fell to 90 or 98, and the system required sustaining treatment. The side increased in size, and in a few days the intercostal spaces were bulged outward.

About the tenth day the heart pulsated on the right of the sternum, and by the fifteenth day there was a distinct pointing between the sixth and seventh ribs. An opening was made, and three half pints of pus discharged at once, after which there was discharged daily half a gill for two weeks. The discharge gradually diminished, and at the end of ten months entirely ceased and the opening closed. The side is considerably collapsed, but the lung admits air, but not in quantity equal to the other. The heart beats on the left side again, and the patient enjoys good health, except the asthmatical difficulty, which does not appear to have been modified by the disease.

The treatment after the operation was quinine, in moderate doses, muriated tincture of iron and iodide of potassium, mineral acids, etc. The diet was of the most nourishing kind.

The second case I saw was on the 1st of February, 1849, a son of Mr. Nickerson, 14 months old. Had effusion when I first saw it; the side, which was the right, being considerably enlarged, and unable to breathe unless the shoulders were elevated. The intercostal spaces protruded and the breast beat exterior to the left nipple.

I operated by making an opening between the sixth and seventh ribs, and evacuated two teacupfuls of pus. The relief was immediate, the little sufferer being asleep in thirty minutes.

This child was nursing at the time and took but little food for five or six days, after which it took new milk, soup, etc. Its medicine was nitric acid diluted and sweetened.

The discharge continued two months when it ceased, and the opening closed. The side is natural. The lung takes air equal to the other, and the boy is now large and healthy.

The third case I saw in 1849. The left side was greatly

enlarged when I was called; breathing much labored; heart beating on right side of sternum. The father objected to an operation, and the boy died in two days. In this case the matter was admitted into the trachea, and was ejected in large quantities with great violence, some being thrown entirely across the room. Death occurred in a few minutes after the matter broke into the windpipe.

The fourth case was Mr. Scott, who, in 18—, was attacked with pneumonia, and received the ordinary treatment for that disease. He was freely bled early in his sickness.

About the twelfth day his side (the left) was discovered to be enlarged, and on the following day his heart beat on the right side of the sternum. On the third day after the enlargement was noticed, the dyspnœa was great, and a consultation was agreed upon for the next day, but the patient died before the time arrived.

This patient died from compression of the lungs, the accumulation being so great that respiration was rendered impracticable.

The fifth case was seen first on 22d November, 1858. The patient was attacked with pleurisy in the left side on the evening of the 21st, and I found him on the following morning suffering extreme pain inside, increased by breathing; cough troublesome, but difficult on account of the pain; pulse 120, full, but easily compressible. The bowels had been evacuated the previous day with sulph. mag. I gave calomel, ipecac., tartar and morphine, and applied sinapisms to the side.

Under this treatment he improved, and the third day I left him convalescent. In two days more I found him suffering with fever, little or no pain in his side, pulse 100 and small, tongue glossy, and tip and edges red. In short, he lay eight weeks with typhoid fever; after which, he got up and walked about the house, but did not get well. His pulse during this time was about 80, soft and full.

This condition lasted about four weeks, when he was taken with a chill, which was followed by fever and pain in left side. This pain was persistent, and was treated with blisters, nauseants and anodynes. Quinine was tried, but aggravated the symptoms.

In four weeks from the chill, the first symptoms of effusion were noticed, which was œdema of the left side and occlusion of the lower part of the left lung from the air.

In two days more the heart was observed to beat under the sternum, and in two days afterwards it beat on the right side of the sternum.

The air now scarcely penetrated the upper portion of the lung, and a careful measurement showed the *right* side to be nearly half an inch the largest, although the effusion was on the left. As the effusion increased the air was prevented from penetrating the lower part of the *right* lung, and the heart was crowded farther to the right side, until it beat under the outside edge of the right nipple, which was the farthest point of deflection from its natural position.

During the whole continuance of the disease the breathing was *not* labored nor hurried, but easy and almost natural. The right side also continued the largest.

I operated on Sunday, the 1st of May, 1859, and discharged a pint and a half of pus at two o'clock p.m., and again removed one pint at ten o'clock same night. One pint was discharged daily afterward, until the accumulation was removed, which amounted to six quarts by estimation, after which about one fourth of a pint was discharged daily for four or five weeks; then the discharge gradually diminished, and changed from pus to serum, and in about eight weeks from the operation ceased entirely and the opening healed.

The medical treatment this patient received was quinine, iodide of potassium, hypophosphite of lime and soda, and diet of the most nourishing kind.

The patient is now enjoying excellent health. The left lung is permeable to the air in its whole extent, and he bears exercise without any difficulty.

I attribute the complete success which attended this operation to two causes: First, to the opening in his side, which was *valvular* to such a degree that the pus would not flow through it at any time, having to pass a tube every time the matter was removed. This prevented the air from entering the pleural cavity except when the tube was used, at which time air always

passed both in and out of the side. Now, my own opinion is this, that the air should be as much as possible excluded from the pleural cavity, because it adds to the irritation and consequently to the danger of the patient, and necessarily prolongs the discharge; but that it increases the danger to the extent generally taught I do not think. The first and second cases both admitted the air freely, and after a few weeks the air passed freely in first case at all times, if the position of the person enlarged or compressed the chest, notwithstanding which the the case terminated favorably, although not so soon as the fifth case.

The second cause to which I attribute the good success of the fifth case, and it bears equally on all the cases operated on, is the system of diet. No pains were spared to nourish the patient with food, which was given in considerable variety, no meal being made of one course. Pure wine from the native grape was given liberally, and new milk was also taken regularly and freely.

To sum up, I would recommend that the opening be made so valvular, if possible, that the accumulated fluid would not escape without the insertion of a tube. That the fluid be discharged a little at a time, never withdrawing more than enough to remove all tension at the first operation. That the vitality of the patient be sustained by all possible means, especially by nutritious diet.

By this means I have succeeded in restoring the cases reported without their assuming a chronic form, which would require local applications to stimulate and charge the secretory action of the pleura.

Should I meet such a case, I should not fail to follow the example and direction of Dr. Brainard, to inject the pleural cavity with iodine. This, to say the least, appears like a heroic operation; but after his reasoning and experience, I should not hesitate to resort to it in any case in which it was not contra-indicated by lesions of structure which would render the case hopeless independent of the pleura effusion.

NOTE BY THE EDITOR.

Our thanks are due to the Clinton Co. Society for the above valuable paper. In the case of empyema, treated by injections of iodine, as reported by us in a former number of this Journal, an error occurred which it is important to correct. The case was of five years instead of five months' standing. We have now under treatment at the Chicago Hospital, a case of empyema of ten months' standing. It was the result of a stab. We throw a solution of one grain of iodine, with thrice the quantity of iodide of potassium to the ounce of distilled water, into the opening twice a week.

This method of treatment is not new or peculiar to ourselves, but has been used successfully by Boinet and others in France several years since.

ARTICLE V.

CASE OF GLANDULAR TUMOR OF NECK.

SUCCESSFUL OPERATION.

BY JAMES CODY, M.D., OF WATERTOWN, WIS.

July 14th, 1859.—Mr. Truman Gates, aged 34 years, of nervous sanguine temperament; has always enjoyed good health. Five years ago he first noticed a small round tumor, just under the left jaw-bone, midway between the angle of the jaw and symphysis. From that time it has steadily increased, without pain or any other inconvenience, until four months since, when it was noticed to increase rapidly, causing much inconvenience from its mechanical pressure on the surrounding parts.

Present condition and appearance of patient.—The left side of the neck presents a large globular swelling, as large or larger than the fist. It commences half an inch below the ear, and extends nearly an inch beyond and to the right side of the symphysis; its upper edge rests on the jaw-bone; its lower edge nearly describes a semi-circle; covering the side of the neck, midway to the clavicle; pressing the larynx and upper

part of the trachea to the right of the median line full half an inch or more; to the left it apparently pressed the sterno-mastoid muscle out or rather to the left.

On passing the finger into the mouth and under the tongue, the tumor can easily be felt through the floor of the mouth and pressing against the root of the tongue. He complains of a difficulty of swallowing; his speech is affected; the voice has a peculiar indescribable sound; some pain in head; face somewhat flushed, and a number of turgid veins are seen passing over the swelling. He says that the pressure of the tumor gives him very unpleasant feelings, and wishes for its removal, as he is conscious it will soon terminate his existence.

The operation was performed in the following manner: Having administered chloroform, an incision was made, extending over the long diameter of the swelling, commencing, perhaps, one inch below the angle of the jaw, and carrying it seven inches, or about opposite cricoid cartilage. This incision was carried through the integument and down to the platysma-myoides muscle. This muscle, with the deep cervical fascia, was now cut through, when the tumor was brought into view. The rest of the dissection was for the most part conducted with the fingers and handle of the scalpel, only occasionally using the edge of the knife to divide bands of cellular tissue. The tumor dipped deep down by the side of the larynx; also mounted up by the inner side of the jaw-bone, being most prominent opposite the molar teeth.

After the tumor was turned out, it was found to be attached by a pedicle half an inch or more in circumference. For fear and to avoid hemorrhage, the pedicle was ligated and the tumor removed.

The tumor was bi-lobed or kidney-shaped, dense and hard to the feel, except one spot, which was soft and seemed to contain a fluid. It measured nine inches in its longest diameter and seven and three-fourths in circumference.

In a few hours after the operation he became very restless; some muscular twitching was noticed; the neck and left side of the face became swollen, but not painful; pulse considerably accelerated. A dose of morphine was administered, and ice

water applied to the swelling; after which he went to sleep, and on waking up felt very comfortable. In the evening one of the sutures was taken out and all the adhesive straps removed. Continued ice water; also gave tart. emet. in solution, quarter of a grain every two hours.

July 15th, 8 a.m. Rested well during night; pulse 90, rather hard; face and neck swollen on left side; continued sol. tart. ant.; apply sol. mur. ammoniæ to swelling; drink, lemonade and cream tartar.

16th, 8 a.m. Spent a comfortable day yesterday; had two dejections; no difficulty in swallowing; voice natural; some discharge from wound; slept well last night; continue mur. ammoniæ; take sol. nit. pot. six gr. every three hours in flaxseed water; urine scanty and high colored.

17th, 8 a.m. Reports himself as comfortable; swelling not decreasing much; ordered flaxseed poultice to face and neck; continue nit. pot., also take cream tartar.

18th, 8 a. m. Is doing well; considerable discharge from wound; continue poultice, etc.

19th. The same as yesterday.

20th. The swelling is fast decreasing; large discharge of pus.

21st, 8 a.m. Swelling decreasing; complains of soreness of throat and difficulty of swallowing; ordered gargle of nit. argent. gr. ij. to ounce of water.

22nd, 8 a.m. Soreness of throat less to-day; continue gargle.

23rd, 8 a.m. The same as yesterday.

24th, 8 a.m. Is not so well to-day; complains of more pain in throat—a sensation of filling up; tongue furred; breath of fetid odour; is to take castor oil ʒij., oil terebinth. ʒi., calc. mag. ℈ij.; after operation and to-night is to take Doveri pulv. et bi-carb. soda, aa. gr. v. every three hours.

25th, 8 a.m. Reports himself as feeling quite well to-day; swallows well; no pain or soreness of throat. He thinks an abscess broke inside the throat last night, as he spat up matter and experienced immediate relief. Cathartic operated three times in the afternoon yesterday. He took but two powders last night; is to suspend medicine; swelling fast decreasing;

wound three-fourths healed; apply simple cerate to wound; flaxseed, mixed up in sal. mur. ammon., to swelling above the wound.

26th, 8 a.m. Considers himself well; swelling nearly all gone.

27th, 8 a.m. Doing well; was about town all day yesterday; starts for home, twenty miles distant, to-day.

27th. Mr. Gates called to-day and reported himself as well. There is no swelling or enlargement whatever of the left side of neck and face; on inspection, no difference of the two sides of the face can be detected.

ARTICLE VI.

DIPHTHERIA.

BY W. GODFREY DYAS, M. D., CHICAGO.

(Continued from page 605.)

The year 1855, in France, proved fruitful in cases of diphtheria. The disease then raged epidemically in that country, and it was observed that its adynamic character had become more marked. Death by asphyxiation, which, in Bretonneau's time, was the rule, now became the exception. Most of the fatal cases terminated by exhaustion. It was also observed that fever became but a secondary element in the disease—many cases proving fatal without it. As it may be instructive to give a case of this kind, we quote one detailed by M. Ramon in the *Gazette des Hopitaux*, September 25, 1855.

"A girl, aged 10 years, was brought to the Infirmerie de Charenton, presenting the following appearances: pearl-like exudations covered the posterior part of pharynx and the tonsils, which were swelled. There was no fever, nor indeed any general symptoms to be noticed. The treatment adopted seems not to have been very active, for nothing internally appears to have been administered excepting barley-water sweetened with honey, and the throat was brushed with honey of roses mixed with alum. Next day the membranous exudation was thicker,

and appeared disposed to be detached from the left tonsil; the exudation was surrounded by a red border, slightly bleeding in points; the breath was not fetid, and the general state was supposed to be good. The same treatment was continued. On the fourth day of the disease, the throat was become nearly free from false membranes. In fact, the local affection presented evidently such a diminution that if it alone were to determine the prognosis, there were grounds to hope the disease would soon completely disappear. There still was no fever, yet the patient became more feeble. During the day she vomited some bile, without having previously had any disturbance of function on the part of the stomach. At the circumference of the nostril of the left side, there appeared a little whitish exudation of about a line in extent from above downwards. On the fifth day of the complaint, the tonsils and pharynx were almost entirely clean. Still no fever, but the child was growing more feeble. Deglutition painful; no appetite. Left nostril, from which there flowed some serum, was narrowed and surrounded by brownish crusts. On the sixth, the patient had a bad night, was restless and enjoyed no sleep; countenance indicated fatigue; pulse small and frequent. Some vomiting of bile. Deglutition painful; urine, thick and scanty. Tongue and throat appeared as they would in scarlatina. Some slight traces still of false membrane on left tonsil and posterior wall of pharynx. In the evening, evidently better; moderate heat of skin; pulse less frequent; tongue and fauces less red. Vomiting not renewed. There yet remained some indistinct appearance of false membrane; deglutition still painful. Chicken broth was given and not rejected by vomiting. No tympanitis, nor abdominal pain; one motion during the day. Seventh day.—Bad night, worse than had been expected; vomiting; skin cold; traits of the countenance altered; pulse small and frequent. In the evening, the left part of the velum palati and tonsil of the same side, as well as the outer wall of the left nasal fossa, were covered with a fresh membranous exudation. The breath is not fetid; skin cold; pulse always small and contracted, but less frequent than in the morning. Abdomen not tense, but is the seat of some undefined uneasi-

ness. (Cauterization of throat with a concentrated solution of nitrate of silver). Eighth day.—Night passed without any rest; excessive debility; cold skin; intellectual faculties retain their integrity; respiration normal; death."

In the sixth volume of the *Gazette Medicale* (1838), there is to be seen a case which, in being free from fever from beginning to end, bears a marked affinity to that just now detailed. It was described as croup, and is the only one of that disease to that date on record wherein could not be detected a single febrile symptom. Cases, unaccompanied by fever, of tubular bronchitis and of pellicular disease of the mucous membrane of the intestines have long been familiar to us; but until M. Ramon placed on record his case of diphtheria without fever, we were unable to predicate universally (in reference to diseases characterized by a deposition of false membrane) that pseudo-membranous exudation, far from being necessarily accompanied by fever, may be deposited on any mucous membrane without the system giving any indication of sensorial or general vascular disturbance. M. Ramon, in laying down the four following propositions, puts on record his views of diphtheria:

1st. Diphtheria is an inflammatory disease, but the inflammation which constitutes the essence of it is allied to a peculiar condition of the system that reveals itself by a coagulation of the products of the inflamed surfaces.

2nd. The concretions that cover the inflamed surface are merely in juxta-position; they are not in union with it, and cannot therefore be confounded with gangrenous products.

3rd. Diphtheria and croup appear to be one and the same disease, the progress of which is at one time ascending—at another descending.

4th. This difference in the mode of progress of croup appears to establish one equally great in the prognosis and treatment. When the disease follows a descending progress, and this he considers as fortunately the more frequent mode, there is reason to expect it will yield to suitable external and internal remedies. If, however, it seizes on the trachea, M. Ramon thinks tracheotomy should be had recourse to. When it commences in the

bronchi and ascends, he thinks then tracheotomy presents but a slender chance of relief.

These opinions, at a future stage of our observations, will engage our attention: we will not now stop to examine them, but pass on to a consideration of the disease as we find it in close relation to others.

It was during this epidemic, so rich in material for observation, that Marechal de Calvi presented his memoir to the Academie des Sciences. He looked upon the disease as having its essence in the blood; and though the exact nature of the *materies morbi* could not be ascertained, he considered the formation of false membrane as attesting an excess of plasticity of that fluid, which he endeavored to lessen by the administration of alkalies. He, therefore, gave bi-carbonate of soda in a case of this kind, and was surprised to see the effect produced in four hours—the plastic coat of the throat had completely disappeared. The quantity administered was something more than fifteen grains every half hour.

There was nothing new in this treatment. The same was proposed and tried by Mouremans in 1838. The case was diphtheria, though described as croup, and recovered.—*Medical Gazette*, April 13, 1839.

We have hitherto been considering this disease without complication. But the epidemic of 1855 did not confine itself to cases free from other complaints. It complicated scarlatina, pertussis, scurvy, dysentery and typhoid fever.

At the Hopital Saint-Antoine it was observed by M. Oulmont as a complication of typhoid fever. This physician tells us he never saw diphtheria at the above hospital seize on persons in good health or in convalescence. In all cases, it was seen complicating some serious affection, on which it supervened, and hastened its fatal termination. It affected a remarkable predilection for typhoid fever. Of eight cases of diphtheria, six appeared in patients labouring under typhoid fever, one in a man ill of double pneumonia, and one the subject of tubercular peritonitis. It appeared, moreover, at variable periods; generally between the second and fourth week of the fever; very rarely towards its decline. In most cases, it accelerated

the fatal termination, which was the immediate result of asphyxia or of a kind of poisoning. In but two of these cases was there a cure. Typhoid fever, in every instance, was unfavorably influenced by the complication, and the latter developed itself without making its approach in that insidious manner to which authors have called attention. Five patients complained of a little uneasiness of the throat and difficulty of deglutition, with swelling of the cervical glands. This last symptom observed by most writers as almost always constant, was wanting in the other patients. In these it was only by an examination of the throat that the disease could be recognised. Then on the uvula, velum, posterior surface of the pharynx, might be seen irregular plates of a greyish hue, very soft, though adherent. That part of the fauces not covered with diphtheritic patches was of a bright red and swelled, as if there was submucous œdema. The tonsils were enlarged in but half the cases. In the rest they were almost normal, except for some shreds of membrane, and it was in these cases that no swelling of the cervical glands, nor of those immediately below the jaw, could be detected. Once the membrane was developed, it rapidly spread over the fauces, and in some hours the guttural fossæ were lined with it. It did not extend to the nasal fossæ. Sometimes, in about twenty-four hours it would extend to the larynx, and then repeated paroxysms of suffocation, with croupal cough indistinctly marked, would supervene. In two cases there were symptoms of extreme asphyxia. In some, the false membrane seemed to vanish from the uvula, pharynx and tonsils; there was no paroxysm of suffocation; nothing, in short, to indicate the extension of the disease to the respiratory passages; and yet, notwithstanding the apparent decline of local symptoms, there came on rapid sinking, coma and death. In two, who recovered, the false membrane in successive portions became detached, and was carried off in a thick viscid and bloody saliva, leaving the mucous membrane injected and the subjacent parts œdematous. The general symptoms of diphtheria were difficult to disentangle from those of the original complaint—so great was the confusion caused by their mutual involvement. Yet M. Oulmont referred more especially to

diphtheria, the swollen face and the œdema of the side of the neck, which occasionally occurred; the tongue was generally dry and swelled; the mouth clammy, the breath fetid; diarrhœa persisted in all, even in those who recovered; the fever augmented, and the cerebral symptoms of the typhoid affection seemed to augment after the appearance of diphtheria. In all the cases, in which the disease terminated in death, its progress was very rapid. In five, it was of but two days' duration, and twice it terminated fatally by suffocation. In the others, death took place by a gradual sinking that succeeded to great excitement. In those who died, the pseudo-membrane, instead of presenting the smooth, shining and *lardacee* appearance most usually seen, was of a dirty grey, very soft and easily removed from the surface. In two of these subjects, the false membrane was limited to the uvula, tonsils and pharynx. The larynx was perfectly healthy. In two, there were but some shreds in the larynx, and in two others the membrane commencing in the back of the throat extended in a continuous line along the pharynx, larynx and trachea.

M. Oulmont adopted the treatment usually had recourse to. He used nitrate of silver both in substance and solution, and muriatic acid. But the results were not satisfactory. He thought muriatic acid caused a great accumulation of mucus above the larynx with distressing dyspnœa. Being struck with the dull-grey color of the false membrane which resembled the grey pellicle covering ulcers affected with hospital gangrene, and recollecting the satisfactory results obtained from lime juice by some surgeons in such cases, he prescribed it as a local application to the fauces in diphtheria. He directed nitrate of silver or muriatic acid to be used morning and evening, and, in the interval, lime juice. Some died so rapidly as not to give time to apply it. Thus its value could not well be appreciated. However, two, thus treated, got well: one on the twenty-sixth day of fever, the other on the fifth day of double pneumonia.

In the *Gazette Medicale* (1848), there is a case related by Barbier which bears a remarkable resemblance to those given by M. Oulmont. It is described as a case of typhoid fever

complicated with laryngo-bronchial croup. It commenced like influenza with sudden seizure, coryza, etc., and terminated fatally. Though described as croup, judging from the symptoms, it was evidently a case wherein diphtheria supervened. Louis also met a case of typhoid fever similarly complicated.

Contrary to what we might suppose *a priori*, diphtheria, when complicating scarlatina, proved milder than when idiopathic. That eruptive diseases have some modifying power over the disease would seem probable from the records of cases; but that diphtheria could supplant any of the former, we had no reason to infer, knowing how frequently it was noticed in connection with scarlatina.

A paper, however, was presented to the Academy by Velpeau, in the name of M. Vernhes, physician at Beziers, entitled Simples Propositions sur le Croup, wherein under the name of croup is described this epidemic diphtheria. The author having remarked that the department of Herault, which for three years was under the influence of a "medico-croupal constitution" the most intense and fatal, during that time presented not a single case of measles. He concluded from this that these affections were to a certain point similar, and was led to think that in inducing, by artificial means, a general exanthem of the surface, it would be possible to succeed in preventing or arresting in the beginning the development of diphtheritic symptoms. He, in consequence, conceived a method of treatment, consisting in provoking a confluent eruption over the whole body by means of croton oil. He says he has proved that after the appearance of an exanthem, the formation of false membrane, if it had already taken place, was completely arrested. The fact is interesting, but the inference deduced is palpably illogical. To assume that the non-appearance of measles, under the circumstances mentioned, was owing to the presence of a disease similar in nature which, as it were, represented the former in the system, is altogether gratuitous.

While this epidemic was prevailing in France, its seeds appear to have been transmitted to the Crimea, where it broke out amongst the French troops, and appeared most frequently in complication with scurvy and diarrhœa. We are indebted to

M. Haspel, physician to the army of the East, for a most instructive account of the disease. It was particularly during the spring and autumn of 1855 that this disease appeared, complicating advanced cases of scurvy and chronic diarrhœa, especially in feeble persons, whose constitutions had been reduced either by previous or actual disease. Sometimes, localized in the superior part of the pharynx and in the tonsils, it, in the beginning, consisted frequently in but a redness more or less intense, with tumefaction of these organs, which, as well as the velum and uvula, then assumed a covering, in certain points, of pseudo-membranous white and irregular patches. Occasionally it limited itself to this, but most frequently it extended to the air passages and nasal fossæ; at other times, it presented from the commencement superficial ulcerations that were soon covered with membranous exudation. By the oppression, coughing, hoarseness, the seat of pain at the inferior part of the neck or behind the sternum, it was known that the air passages were attacked. The patients soon began to expectorate a purulent fluid, whitish and not coherent, which obstructed the bronchi and rendered respiration difficult. Two of the cases detailed, commencing as simple angina and being consecutively membranous, all at once assumed the character of gangrenous angina, in men affected with scurvy. On dissection, the disease was marked by bright-redness and swelling of the pharynx. Irregular flaps, small in size, of pseudo-membrane covered certain points of the surface of the pharynx, tonsils, velum, sometimes also the larynx and trachea. Beneath, the mucous membrane was red and rough; the epidermis had been removed, and there evidently was erosion of the surface. But on an incision being made into the trachea and bronchi, the abundance of sero-purulent liquid which had accumulated and escaped was particularly striking.

The treatment consisted in vomits. Sometimes the dysphagia was such as to cause rejection of fluids by the nares, even when taken in the smallest quantities. At other times, they acted on the intestinal tube, especially in those who had diarrhœa. Cauterization by muriatic acid, and nitrate of silver was used early in the disease but without effect. This cauterization was often difficult. It left in the throat an intolerable savour, and

was not effected without danger. Besides, it produced violent excitement by the energetic efforts it provoked; and by the excessive elevation of vital manifestation it momentarily roused, exhausted the resources of the system and hastened the fatal termination, especially if, as was the case here, one had to deal with deteriorated constitutions.

Intimately connected with researches on this disease during the epidemic of 1855, a new phenomenon was made known by Bouchut and Empis. Albuminuria was observed to exist in a certain number of children affected with diphtheria. This did not appear in every case of the disease;—it was seen in eleven out of fifteen cases. It was considered to indicate the infectious nature of the disease, resembling, in that respect, purulent infection, which is accompanied by the same alteration of urine. Besides, as its disappearance coincides with the cure of the disease, it was supposed to constitute one of the most valuable signs. In the words of the report read to the Academy in reference to the memoir presented on this subject by Bouchut and Empis, albuminuria, as seen in diphtheria, "may depend on different causes, which it is necessary to seek out in order not to make any premature generalization, and to restrict us to the precise and scrupulous observation of facts. It is known that eruptions of scarlatina may precede or follow malignant angina, croup, ulcerated and gangrenous sore throat. This is the result known from cases of old, to be traced back to the time of the Syriac ulcer, so well described by Aretæus." "In this case, the albuminuria may be referred to scarlatina."

Wherever there is a stasis of the blood, as in croup with asphyxia, pertussis, cholera, affections of the heart, or any condition of the system causing congestion of the kidney, there will also be albuminuria. But in addition, there is supposed to be in diphtheria a special albuminuria depending altogether upon poisoning of the blood, one that seems to ally diphtheria to purulent infection—an albuminuria that is not connected with scarlatina, nor with asphyxia, but which belongs to the nature of the disease itself, and which announces the generalization of the latter. We, at present, content ourselves with stating the fact, but withold our assent to the opinion based on

it by the authors of the paper, who pronounce it the first degree of infection of the humours by the absorption of a special purulent product which poisons the patients and causes them to die so unexpectedly.

The sudden and unexpected death may certainly be owing to the blood being saturated with a poison, but we have no evidence of a special purulent product being absorbed. The mere presence of albuminuria apart from the stasis of the blood is not the only fact that has led MM. Bouchut and Empis to the above conclusion. They assert that both in diphtheria and purulent infection there are, 1st, Alteration of the color of the blood which assumes a bistre tint; 2nd, Nuclei, more or less numerous, of pulmonary apoplexy, like those that precede the development of metastatic abscesses; 3rd, Ecchymoses of purpura on the skin, on the serous membranes and in the viscera. They think that now there is nothing more necessary to establish the connection between these diseases than the presence of visceral abscesses or purulent (metastatic) collections in the serous membranes in addition to the preceding alterations.

"But," they observe, "these abscesses are not so necessary to characterize absorption of pus, and they do not exist in all those who die of purulent infection." In all the children under their care for diphtheria, the urine was analyzed both by heat and nitric acid. When there was albuminuria, the urine contained an enormous quantity of salts, which rendered it muddy and milky-looking at the moment of emission. At first the heat caused the salts to be held in solution; then at a higher degree of heat, there was a precipitation of albumen. Three times the precipitate was remarkably abundant; once it was scarcely apparent, and in the rest of moderate amount.

The epidemic of 1855 was, as we have said, essentially adynamic in character and varied thus considerably from what Bretonneau described, which was more inflammatory and caused death by symptoms of croup, whereas that which now engages our attention destroyed patients as glanders would kill. It was contagious, developing itself slowly and insidiously, marked by prostration and debility, feeble pulse and swelled cervical glands, and existence of false membranes in the nasal fossæ,

pharynx, vulva, sometimes in the larynx, trachea and bronchi. It had no gangrenous odour, was not characterized by difficult breathing, and did not destroy by asphyxia. Tracheotomy was contra-indicated. Cauterization of the surface and tonics were the only means that seemed useful. But under every plan of treatment, the majority of those ill of the disease died.

Bretonneau did not suppose that the disease he described could be propagated through the air, but supposed it was always the result of a kind of inoculation—of a real contact of the morbid products with the mucous membrane. Trousseau was less absolute in opinion. He did not reject the contagion *a distance*, which to-day is generally admitted. Bretonneau considered the descending progress as a characteristic of the disease, but this was contradicted by innumerable facts supplied by the epidemic of 1855. But though contagion could not be doubted, yet epidemic influences were the principal cause of the extension of the disease at that time.

Dr. Adolphe Gubler, as the result of extensive observation during this epidemic, was induced to view diphtheria and gangrenous sore throat as one and the same general disease, with different local manifestations; and thinks that, though one mode of expression may be the more frequent, still it is not rational to define the disease by that alone. That anatomical forms can only serve to mark peculiarities in the species; but, that in order to unite, under one denomination, these severe anginæ, whether diphtheritic, sphacelo-diphtheritic or gangrenous, we should not have regard to any character except a constant one, and designate them as malignant angina. We must here quote Guerin's comments on the above paper, they are so significant, and so much in accordance with our own views. "These reflections of M. Gubler are a still further proof of the struggle which establishes itself amongst all against the excessive predominance given among us to the anatomical element in disease. The general state of the economy claims every day its more considerable share in the physiognomy of disease. Anatomo-pathological materialism led us too far."

Before we take leave of this part of our subject, perhaps it would be well to consider more in detail the claims which the

opinions and practice of Marechal de Calvi and M. Vernhes have to our confidence. We have already stated that the former, viewing the false membrane as the expression of some unknown morbid principle, and which, though itself not constituting the disease, was the immediate result of the first pathological phenomenon, and attested at least an excess of plasticity of the blood. The indication he therefore thought consisted in removing this undue plasticity, and with that view he administered alkaline carbonates; with what result we have already above stated.

Now it is a remarkable fact that during the Crimean campaign, diphtheria was seen in the French camp amongst those who at the time were suffering from scurvy. Surely it will not be said there was an excess of plasticity of their blood; nor will it be maintained there was a want of alkalies in it. We have the testimony of Fremy, Andral, Gavarret, Becquerel, Rodier and Headland, that in the blood of scorbutic patients there is an excess instead of a deficiency of the alkaline salts.

During this epidemic it was observed that diphtheria differed from other specific diseases, such as small-pox, measles and scarlatina, by the frequency of its relapses. This feature alone would discountenance the notion of similarity between it and measles, as advanced by M. Vernhes. The fact that for three years during which the "epidemic constitution" was decidedly diphtheritic in the department of the Herault, and during which there was not, in an extensive district, a single case of measles, is an important fact, and one which we would explain on an altogether different principle from that proposed. Instead of recognising any affinity between diphtheria and measles, we, on the contrary, are disposed to see nothing but opposite relations. These are frequently seen amongst diseases. Small-pox and vaccinia are a proof of the mutual counteraction of morbid processes. Ague is said to be antagonistic of phthisis; and it is alleged that Fouquet of Freiburg has successfully opposed syphilis by revaccination. M. Vernhes has given us a fact and a theory. The first is important and may lead to some practical use; the second is totally unsustained and in opposition to analogy.

During the progress of the epidemic, practitioners avoided the employment of cutaneous revulsives as they became new foci of diphtheritic deposition. There was, however, one situation, we are told, where a breach of surface was not necessarily followed by false membrane, but the contrary was observed; as we learn that benefit ensued from the excision of a tonsil. The case is related by M. Domerc. The patient was a child about five years old, and had previously been ill of whooping cough when seized with diphtheria. One of the tonsils was amputated with the effect of arresting the secretion of false membrane, and subsequently there was no deposition on the denuded surface. The treatment that was at this time usually employed in France consisted in being very sparing of sanguineous evacuations, as the affection became promptly adynamic; all cutaneous revulsives were proscribed; emetics were thought valuable; and alteratives of mercury, alkaline carbonates and chlorate of potash were supposed useful. Local treatment was directed to the fauces, with the view of energetically modifying the diseased surface—calomel, powdered alum, muriatic acid, but especially the nitrate of silver, were used. In fine, besides employing remedies to counteract the morbid principle in the blood, as each based his practice on some theory that involved this notion, restorants were freely administered both in the way of food and medicine—quina, coffee, generous wines, etc. —the employment of which had long to be continued after convalescence.

(TO BE CONTINUED).

BOOK AND PAMPHLET NOTICES.

PHYSICIANS' HAND BOOK OF PRACTICE. 1860. From S. C. Griggs & Co., Lake Street.

This little work is a pocket manual—if such an expression be correct,—and contains all that a physician may need for his memoranda, notes, accounts, etc. It is an improvement on anything of the kind which has fallen under our notice.

AN INTRODUCTION TO PRACTICAL PHARMACY. Designed as a Text Book for the Student, and as a Guide for the Physician and Pharmaceutist; with many Formulas and Prescriptions. By EDWARD PARRISH, Principal of the School of Pharmacy, Philadelphia, etc. Philadelphia: Blanchard & Lea. P. 720. From W. B. Keen, Lake Street.

This is the second edition of a work which is already a standard on the subjects of which it treats. This work is not intended to supersede the National Pharmacopœia, but as a necessary supplement. The processes of preparing and dispensing medicine are fully detailed in the 2nd and 5th parts. Directions are given for the preparation of all the new medicines in use; and it appears to contain all the directions necessary to an accomplished pharmaceutist, who has already a sufficient knowledge of chemistry and materia medica. We recommend all physicians who are under the necessity of compounding their own medicines, and all apothecaries, to give it an examination.

THE ACTION OF MEDICINES IN THE SYSTEM; or, "On the Mode in which Therapeutic Agents introduced into the Stomach produce their peculiar effects on the Animal Economy." By FREDERICK WILLIAM HEADLAND, M.D., B.A., F. L.S., Licentiate of the Royal College of Physicians, etc. etc. Third edition, revised and enlarged.

"On no question, perhaps, have scientific men differed more than on the theory of the action of medicines." Such is the opinion not only of our author but of all connected with medical pursuits. The book now before us, eminently calculated as it is to confer benefit on the science and practice of therapeutics, has already done much to lessen this difference of opinion, by the promulgation of correct principles. It has reached a third edition, which includes some matters not contained in those that preceded it. The arrangement, classification, and strictly logical method adopted; the conclusiveness and simplicity of the experiments in support of views, clear and philosophical; and the accuracy of expression with which these are communicated, —cannot but command attention and excite interest. The arrangement of the heads of the subjects in a number of distinct propositions, dividing each of these into minor propositions, which, taken together, imply the original one, is a method that will not fail to enable the student, by almost imperceptible steps,

to keep pace with the arguments, and ultimately to share the convictions, of the author. Occasionally, he indulges in speculations and hypotheses, but not without having previously warned the reader that he was about to wander from the high-road of ascertained truth, over the ill-defined and indistinct by-paths of conjecture.

In the first chapter, devoted to introductory remarks, he sets forth the great importance and extent of the subject; shows in what manner he proposes to attain clearness and correctness of language and argument in the treatment of the several topics he is about to consider; and explains the scheme and arrangement which he means to follow in the execution of his design.

The second chapter contains a brief review of the opinions of other writers,—gives their classifications as "the best key to the main opinions" of their respective authors, and occasionally (and we must add, successfully) opposes doctrines hitherto unquestioned.

In the third chapter, he states his own opinions as to the *modus operandi* of medicines, and treats of their general modes in ten propositions. These we give in his own words:

PROP. I.

That the great majority of medicines must obtain entry into the blood, or internal fluids of the body, before their action can be manifested.

PROP. II.

That the great majority of medicines are capable of solution in the gastric or intestinal secretions, and pass without material change, by a process of absorption, through the coats of the stomach and intestines, to enter the capillaries of the Portal system of veins.

PROP. III.

That those medicines which are completely insoluble in water, and in the gastric and intestinal juices, cannot gain entrance into the circulation.

PROP. IV.

That some few remedial agents act locally on the mucous surface, either before absorption, or without being absorbed at all. That they are chiefly as follows:

a. Irritant Emetics.

b. Irritant Cathartics.

c. Superficial Stimulants, Sedatives, Astringents.

PROP. V.

That the medicine, when in the blood, must permeate the mass of the circulation, so far as may be required to reach the parts on which it tends to act.

That there are two possible exceptions to this rule:

a. The production of sensation or pain at a distant point.

b. The production of muscular contraction at a distant point.

PROP. VI.

That while in the blood the medicine may undergo changes, which in some cases may, in others may not, affect its influence. That these changes may be—

a. Of Combination.

b. Of Reconstruction.

c. Of Decomposition.

PROP. VII.

That the first class of medicines, called Hæmatics, act while in the blood, which they influence. That their action is permanent.

1. That of these some, called Restoratives, act by supplying, or causing to be supplied, a material wanting; and may remain in the blood.
2. That others, called Catalytics, act so as to counteract a morbid material or process; and must pass out of the body.

PROP. VIII.

That a second class of medicines, called Neurotics, act by passing from the blood to the nerves or nerve-centres, which they influence. That they are transitory in action.

1. That of these some, called Stimulants, act so as to exalt nervous force, in general or in particular.
2. That others, called Narcotics, act so as first to exalt nervous force, and then depress it, and have also special influence on the intellectual part of the brain.
3. That others again, called Sedatives, act so as to depress nervous force, in general or in particular.

PROP. IX.

That a third class of medicines, called Astringents, act by passing from the blood to muscular fibre, which they excite to contraction.

PROP. X.

That a fourth class of medicines, called Eliminatives, act by passing out of the blood through the glands, which they excite to the performance of their functions.

The chief objects for which he designed the fourth chapter are, as he tells us, "to illustrate some general principles of the action of medicines which have been laid down in the propositions, and show in what manner they are applicable to special cases, and to enter into certain details respecting the more important remedies."

We thus see his classification embraces four great groups of medicines, to each of which one of the last four propositions refers. The first group he divides into medicines restoring to the blood a substance natural to this fluid, and not necessarily excreted from it; and into such as are not its natural constituents, and therefore such as sooner or later must be excreted from it. The applicability of the former depends on the absence of a natural substance; that of the latter, on the presence of an unnatural agency. The second group includes nearly all the powerful poisons that act after passage into the blood, and whose peculiar mode of action is in many respects involved in obscurity. The third, less important and less obscure in action, seem to owe their remedial properties both to chemical and vital influences. The fourth form an extensive class, and though their efficacy in the removal of disease, and, to some extent, the manner in which this is exerted, were not unknown to our predecessors, yet the precise method by which, in those instances, causes proved adequate to the production of corresponding effects, was a problem reserved for solution by more recent observers.

Some years ago the opinions entertained by the profession as to the mode of action of medicines might be referred to three different heads. Some maintained medicines were absorbed by an order of vessels that discharged this particular office of absorption, and this only; others, that absorption was effected by the venous system; and others still, that though the action of some substances might be the result of absorption, yet this was not necessary to the development of the action of all; as many operated through the sentient extremities of the nerves. That the sentient extremities of nerves are the media between medical agents and the brain is a doctrine opposed by the author. We are not prepared altogether to ignore the

possession of some property of this kind to the nervous system. We confessedly share, in this respect, the guilt of medical heresy that attaches to some of the most competent observers in the profession. Amongst others, Sir B. Brodie thinks that the action of a medicine or a poison may be partly transmitted through the nervous system. We are aware of there being arguments advanced against this opinion—of which, perhaps, not the least forcible is, that it is unsupported by analogical reasoning—that, in fact, each fibril of a nerve has some particular office assigned to it, and that there is no instance in the animal economy of a nervous filament being capable of performing a double office. But in questions of science we must bear in mind that analogy is not proof; and a principle should be proved before analogy can be available in giving weight to evidence. We will not, however, dwell further on this matter, but proceed with the main subject.

Dr. Headland states that the great majority of medicines are absorbed through the coats of the stomach and intestines, and pass through to the portal veins—that continuity of nerve is not necessary—that the circulation of the blood is sufficiently quick to account for the operation of even those poisons which act most rapidly by influencing the nerve centres, and that the great majority of medicines have been detected in the blood, and found in the secretions formed out of it. Some facts ascertained of late years and now generally received, serve as the foundation of these several propositions. It is conceded that the secretion of the stomach is acid,—that of the liver and pancreas, alkaline; and that these secretions act on different principles taken as food or medicine. In the stomach, the venous system is the agent of transmission of absorbed matter; in the intestines, not only the venous system, but also the lacteal vessels perform this office. Fatty matters, whether food or medicine, are not supposed to pass directly into the blood through the mesenteric and portal veins, but are carried along the lacteal system, after having been emulsified and saponified by the bile and pancreatic secretion. Under this head we must include resins, and medicines owing their efficacy to resin. By the action of the lactic acid and pepsine of the gastric juice, nitro-

genous and other nutritive matters are dissolved and absorbed by the portal venous system.

From the researches of experimental physiologists, it would seem that starch and substances referable to this principle are alike indebted to these different agents for their successive transformation into dextrine and glucose, until ultimately they result in combustion and the formation of carbonic acid. Dr. Headland does not think the lacteals are ever engaged in the absorption of medicinal solution, with the exception, perhaps, of fats and fixed oils, for the following reasons:

In the first place, it appears from the researches of Bernard and others that the lacteal system is a special arrangement for the absorption of fatty substances, and that other matters, such as albuminous compounds, pass for the most part into the veins, and thence to the liver. Besides, it seems that these lacteal absorbents are only in action during the digestion of food, when the epithelium on the surface of each villus becomes loosened, in order to allow to the chyle an easier access to the lacteal within it. So that it is likely that a small portion of the fluid or soluble substance would be insufficient to rouse them to action. And, in the third place, direct experiments of a decisive kind have been made on this point. Magendie has found that the ligature of the lacteal trunks does not prevent the occurrence of poisoning from agents introduced into the bowels. And Tiedemann and Gmelin have carefully sought in the chyle for a number of different medicines administered to animals in their food, and have been unable to detect any of them there. So that, with the exception, perhaps, of fats and fixed oils, we may reasonably conclude that no medicinal substances pass into the system through the lacteals, but that all are absorbed by the veins or capillary vessels.

Two distinct classes of substances are already stated to be susceptible of absorption. Besides these, there are mineral substances soluble in water, in acids, or in alkalies; and vegetable products soluble in water. All minerals soluble in water, we are told, are, without exception, absorbed in the stomach and intestines. It has been argued by some that the purgative effect of saline purgatives of greater specific gravity than serum is in obedience to the physical law,—that the lighter of two fluids of various density passes through to the heavier;—that, therefore, when a saline is so diluted as to be lighter than serum,

it is absorbed, and, when absorbed, produces diuresis; but that when its specific gravity is greater than serum, it purges, by causing a passage of the serum outwards into the intestines, thas producing a watery evacuation.

This theory is opposed by Dr. Headland. He believes that both solutions are absorbed, and the effect, whether purgative or diuretic, mainly depends on the quantity of the salt, as the kidneys will not eliminate beyond a certain amount of it. In support of his views, he made the following experiments:

Exp. 1—A sufficient quantity of white sugar was dissolved in four ounces of water to raise its specific gravity to 1·028, that of the serum of the blood. A sufficient quantity of Sulphate of Magnesia was dissolved in another ounce of water, to render it of the density of 1·060. This heavier solution was introduced into an open wide tube, closed completely below by a clean piece of bladder. It was introduced into a small vessel containing the solution of sugar, and arranged so that the height of the two liquids should correspond. After standing for some time, the inner solution measured two drachms more, and the specific gravity had sunk to 1·050. The outer solution, after making up exactly the loss by evaporation, was found to have risen in density to 1·040. On adding a small quantity of each of the solutions of Phosphate of Soda and Carbonate of Ammonia, a copious precipitate took place, indicating the presence of magnesia. Thus it appeared that the fluids passed both ways, some of the heavy solution of magnesia finding its way through to the lighter solution of sugar. The tendency of this process was evidently to an equalization of their densities, both by endosmose one way, and by exosmose the other. Thus, apparently, would it be with a saline purgative, and with the serum of the blood.

Exp. 2.—Three drachms of Sulphate of Magnesia (a very mild purgative dose) were dissolved in ten ounces of water, and thus administered to a healthy young man. It produced, after some time, slight purging, and some diuresis. The urine, when tested, contained only a very little more than the usual quantity of magnesia. The quantity in the dose was less than five per cent. of the solution, and thus, according to the endosmotic theory, should have produced no purging.

Exp. 3.—Six drachms of the same salt were given in eighteen ounces of water to the same patient. After a few hours it caused very copious and long-continued watery purging. The urine did not seem to be increased, and contained no excess of magnesia. It seemed, that in spite of the dilution, the quantity of

the salt was so large, that it could not pass off by the kidneys, and so was eliminated from the blood by the bowels, in the same way as other purgative medicines. (*Vide* Cathartics, and Chap. IV.)

Exp. 4.—This trial was the reverse of the last. Two scruples of Acetate of Potash were dissolved in three drachms of water, and thus administered. The solution then contained about twenty per cent. of the salt. According to the endosmotic theory, it should have caused only slight purging, on account of its density. It did not do so, but produced diuresis. The dose was so small, that after absorption it was easily eliminated by the kidneys. The alkalinity of the urine which resulted was a proof of the absorption of the salt, and its passage into this secretion in the form of a carbonate. (See Prop. VI.)

Exp. 5.—(In Chap. IV., Art. Sulphate of Magnesia, will be detailed some experiments designed for the purpose of still further demonstrating the *modus operandi* of this salt and others like it. One of these may be quoted here, as bearing directly upon the subject in hand. It proves that a dense solution of Sulphate of Magnesia is absorbed in the intestinal canal.)

Three drachms of Sulphate of Magnesia, dissolved in three ounces of water, forming a solution having the density of 1·060, were injected down the throat of a healthy dog. It was killed after three-quarters of an hour, and the whole contents of the stomach and intestines, none of which had been lost either by vomiting or purging, were subjected to a careful analysis. The result showed that only fifty-five grains of the salt remained out of the three drachms. The rest must have been absorbed into the blood.

To sum up these experiments. The first shows how, in an experiment made out of the body, a dense fluid will pass through to a light one on the opposite side of a membrane, the densities of the two being at the same time gradually equalized. The second and third demonstrate that a solution of low specific gravity will occasion purging, whereas, according to the *Endosmotic theory*, it should not do so. And the fourth and fifth show that a dense solution is absorbed; whereas, according to the *Endosmotic theory*, it should not be absorbed.

We believe there are few at present who will deny that some diseases originate in the blood, and that the most rational mode of treatment must be in meeting the evil in its stronghold—*in fonte* and *origine*. We know we are, in many instances, now possessed of the means of successfully dealing with disease,

whether this depends immediately on the absence of some material in the blood necessary to health or on the presence of what may be positively prejudicial to it. These means consist in what Dr. Headland terms Hæmatics. He divides them into Restoratives and Catalytics, as they are respectively adapted to the two conditions above stated. This classification especially recommends itself by its simplicity. There is an air of truth about it, that unavoidably leads a reader, conversant with disease, to the conviction that it rests on no frail foundation, but that it is destined to remain one of the established facts of science. "Each Restorative has in healthy blood a substance analogous to or identical with itself: it replaces this when deficient. Not so with other Hæmatics. There is, in general, nothing in the blood corresponding to them."

Dr. Headland remarks that Catalytic medicines sometimes simulate the action of particular diseases, and that the disciples of Hahnemann fancy they derive from this a sanction to their absurd theory. The following explanation suggested by our author is ingenious: "This partial resemblance is probably due to the fact that both disease and remedy produce a series of changes in the same set of particles in the blood. If it were not so, the remedy could not meet the disease. It would be out of its province, as not acting at all in the same sphere. But that the actions are essentially different is sufficiently proved by the fact that they counteract each other. The remedy moreover is often of equal efficacy in other different disorders."

We now pass on to a review of the eighth proposition; and here, from the obscurity in which nature veils her proceedings, we are deprived of much of the interest we felt in the consideration of the former proposition. There we had the light of Chemistry to elucidate many things that in former days could be but guessed at;—in the part of the subject we are now come to, we can only grope in the dark. Here the aid of chemical science is wholly unavailing, and those influences which we vaguely term vital, seem to reign with undisputed sway over the many incomprehensible phenomena of the Nervous System. The author, however, is not satisfied without venturing a theory

to account for the action of the class of medicines called Neurotics. We insert his own language. "It is generally believed, among scientific men, that each particle of a compound body is made up of a number of indivisible atoms, each of which is inconceivably minute in size. And as these compound bodies have each a peculiar chemical constitution, so must each of their ultimate parts be composed of a peculiar arrangement of simpler atoms, and thus have a certain shape of its own, more or less different from the shape of every other compound atom. Both the substance of a nerve, and the active part of a nerve-medicine, consist of a number of definite compound atoms. And it is possible that the atom of a stimulant medicine may be of such a shape as that it shall be unable to coincide with, or to fit into, the series of atoms forming the sensitive surface of the nerve, and thus irritate this when brought into contact with it; and that the compound atoms of a sedative may so arrange with these nerve particles as to fit among and extinguish the salient points, and annihilate their natural sensibility."

This is of course purely conjectural, and its truth or falsehood must, from our finite powers of observation, be wholly insusceptible of proof. It is not, however, probable, from analogical reasoning, that nature accomplishes her work in a living body by means so mechanical. Such notions are more suited to the days of corpuscular pathology—the days of angles, spherules and frictions derived from the Cartesian philosophy—than in these of advanced development in science. They cannot, therefore, receive a serious and formal refutation. We have neither confidence in this theory of the action of Neurotic medicines by atomic shape nor in another of the chemical school, though sanctioned by Liebig, Snow and others. As this latter, however, has not received Dr. Headland's sanction, we will not at present consider it further.

We must now bring our notice to a close, having already exceeded the space we originally intended to assign it.

This is a book, the intrinsic merit of which reveals itself in proportion to the pains expended in working the deep mine of intellectual wealth with which it is enriched. The ore, how-

ever, throughout, is not of equal value. What is contained under the seventh proposition defies censure, and is beyond our feeble commendation. The fourth chapter, devoted to "the action of the more important medicines in particular," neither indicates the research nor the matured mind displayed in the preceding chapters. These are bestowed in unequal proportions, through its various parts. This alone would constitute a blemish; but, in addition, there is an inaccuracy of language that takes off from the seemliness of its appearance. These are blemishes which can be easily rectified, and that would now have most probably escaped observation, had not the book by its very excellence invited animadversion; for in proportion to the worth or purity of a thing, so by contrast is any defect of it more easily discerned. Yet with all the trifling imperfections that even the most fastidious criticism can expose, this work must have an undisputed title to pre-eminence in this department of medical literature.

We are in receipt of the following works from W. B. Keen:

Pathological and Practical Observations on Diseases of the Alimentary Canal, Œsophagus, Stomach, Cæcum, and Intestines. By S. O. Habershon, M.D., Londin., Fellow of the Royal College of Physicians; Assistant Physician to Guy's Hospital, and Lecturer on Materia Medica and Therapeutics; late Demonstrator of Morbid Anatomy, and Curator of the Museum at Guy's, etc. etc. Philadelphia: Blanchard & Lea. 1859.

A Practical Treatise on the Diagnosis, Pathology, and Treatment of Diseases of the Heart. By Austin Flint, M.D., Professor of Clinical Medicine, etc., in the New Orleans School of Medicine; Visiting Physician to the New Orleans Charity Hospital; Honorary Member of the Medical Society of Virginia, of the Kentucky State Medical Society, of the Medical Society of Rhode Island, of the Pathological Society of Philadelphia, etc. Philadelphia: Blanchard & Lea. 1859.

Also, from Jones & White, Dental Depot, Chicago:

A System of Dental Surgery. By John Tomes, F.R.S., Dentist to the Dental Hospital of London, and to the Middlesex Hospital. With Two Hundred and Seven Illustrations. Philadelphia: Lindsay & Blakiston. 1859.

A Practical Treatise on Operative Chemistry. By J. Taft, Professor of Operative Dentistry in the Ohio College of Dental Surgery. With Eighty Illustrations. Philadelphia: Lindsay & Blakiston. 1859.

ADDRESS

Introductory to the Seventeenth Annual Course of Lectures in Rush Medical College,

DELIVERED NOV. 1, 1859.

By J. ADAMS ALLEN, *Prof. of Principles and Practice of Medicine.*

Gentlemen of the Class:

With this day commences the Seventeenth Regular Annual Session of the Rush Medical College, and it becomes my pleasant duty, on behalf of my colleagues of the faculty, to bid you cordial welcome.

In a country like ours, where the rattle of the rail car and the click of the telegraph intermingle with the sounds of the axe and the rifle of the pioneer, sixteen years of healthful life and activity give claim to the prerogatives of mature youth, if not of venerable age. Rush Medical College having passed beyond the years of doubtful experiment, and counting with pride its scores and hundreds of alumni engaged in honorable and successful practice of the principles here inculcated throughout the interior valley of the continent, and even upon its western slope to the Pacific, may well exult in the prosperity which has thus far attended its existence, the success which has crowned its teachings, and the brilliant future to which it may warrantably aspire.

We have invited you to these halls, Gentlemen, with the map of the country before us, with the volume of medical history in view, and, as we believe, not untaught as to the requirements of a science which is every day becoming broader and deeper, of an art which is every day becoming more exact and practical.

The metropolis of the North-West, concentrating the business energies, enterprise, wealth and population of a vast region of country unsurpassed, perhaps unapproachable by any other, in all the elements of agricultural, mineral, forest, manufacturing and commercial resources, offered, and still offers, a field for medical observation, experience and communication of their results, both scientifically and practically, which few localities afford. Here the union of science with art, the lecture and the clinic, can be realised, and become prolific of invaluable results.

Medicine, Gentlemen, is a progressive science; it has not reached the region of ultimate facts, around which, as central suns, systems of belief and practice can revolve in perpetual

uniformity, undisturbed by the proximity of erratic truths. It accepts all truths, even though they refuse orderly arrangement. It explains them as best may be, but never submits to be governed by its explanation. The true medical man controls his theories, and is not controlled by them. We strive to bring medicine to the level of the exact sciences by guiding our inquiries, our experiments, our reasoning by the same inductive methods which have brought to light so many ultimate facts, or general laws outside the domain of medicine.

Incident to this attempt, a vast number of general laws, indubitable and exact, have been developed in the various sciences collateral to medicine. These are like the mathematical propositions which one by one for ages were being established, until by and by they proved the rounds of a ladder reaching from earth to the far away spheres, upon which Newton and his fellows have ascended to the ultimate principles of astronomy, and have plucked from the firmamental orbs the secret of gravitation.

Day by day the cultivators of our science are aiding in this great work, and, although it may not occur in our day, yet by the united opinion of the greatest names known to our science, we are warranted in believing that we stand upon the threshold of discoveries which shall forever release medicine from the imputation of being in any sense, "a conjectural art," and bring it upon the level of the exact sciences. This is the great object now before the professional world, and to the attainment of it certain qualifications are indispensable.

1. A clear, accurate and general acquaintance with all the known facts of medicine, including its collateral sciences, together with all their discoverable bearings upon each other.

2. A sound mind educated *how* to think, and free from subserviency to dogmatical injunctions of *what* to think.

3. An acquaintance with the history of the operations and results of other men's thoughts upon the same subjects.

Gentlemen, if any of you, in commencing the study of medicine, has been in any degree induced to take it up from a feeling of indolence fostered by the popular idea that in this science discrepancies of opinion are almost the rule, and therefore it is of trivial importance what particular ideas you do collect, you must allow me to disabuse your minds at once of this fatal error, by calling your attention to certain great classes of facts, which are as fixed and indubitable as nature affords, and of which you must attain a knowledge, even though you aspire but to a humble or mediocre place in the profession.

Thus it is seen that the Anatomical Structure of man consti-

tutes a science of itself, though only a fraction of the medical cyclopædia. The shape, size, position, relations, general and minute structure of each part; the occasional diversities within the limits of health, are topics where all creeds and sects of medical men, whether surgeons or physicians, find common, indisputable and indispensable study.

Again, the body is surrounded by various materials, some of which in life it receives into its interior, and into which after death it is decomposed. All substances influence it, and all forces may come in contact with it, and how can the resulting effects be explained, unless both substances and forces be in themselves understood? Hence Chemistry in all its range and minutiæ—the scientific history of all ponderable and imponderable agencies must be investigated and understood as essential and constituent parts of the one great science of medicine.

But as in anatomy, the organs are to be studied, in repose, so it becomes necessary to study them in action. The prominent motions evincing animal life; the movements of fluids in their channels, as common or peculiar to animals and vegetables; the motions, transformations and conduct of the minute cells which the microscope brings into view; the changes which food and air undergo on being received within the body; the nature and source of animal heat; the nature and relations of the diverse fluids, their operations within and without; the development of the embryo to the adult, of cell and membrane and pulp to gland and nerve and muscle, of cartilage to bone; the separation of conjoint actions, and assignment of each to special organs; the mysterious organization through which the mental part develops its influence, and the modes of its manifestation; the influence of vital stimuli and all forms of force in promoting, retarding or modifying the action or composition of each or all of the organs; the determination of all influences, whether of form, connection, integral constitution, or of force, that maintain the equable and harmonious action of the several parts, and of the system entire. Surely here is the science for a life's pursuit.

But, as one has well said, "Had there been no other animals, the nature of man would have been far more difficult to be understood;" thus it is seen that philosophic Zoology is also to be studied. The internal and active organs of man are removed from the sphere of direct inquiries, save in rare and accidental cases. Hence we are led to search out the modes of action in animals having corresponding organs; or, if general likeness, but particular differences obtain, then to seek for the differences, and assign, if possible, the modified structure or

conditions giving origin to them. Thus, little by little, we are led along, connecting structures and functions of the first simplicity, with structures and functions of the last complexity; contemplating life and organism, not in isolated instances, but in the linked series which they form, filling up one grand system, and rounding out the circle of animal life. And when, here and there, at intervals, a few links are found wanting in the grand chain, the very absence indicates the route of discovery to other instances, perhaps in the unexplored regions of the earth, or buried with its fossil forms, or yet to appear, of individuals that would complete the wonderful catalogue, and in the symmetrical plan of organization, fill up the vacant places.

Perhaps it is safe to say, that there is no other single science which at the present time is more minutely known, and in which the permanent trophies of inquiry are of more triumphant nature than in Physiology, or the science of life.

To the study of anatomy, chemistry and physiology, however, is yet to be joined that of disease or Pathology—that science which includes all we may know or apprehend of those changes in the structure or action, of parts or the whole, of the animal framework that impair perfection, or tend to dissolution. All of these, we believe, to be reducible to series and their causes to be developed. At one time variations of structure by direct injury, decomposing agents or poisons are seen to prevent the toward impression of vital stimuli; or these latter begin the difficulty, by similarly impairing structure. Now, the influence of general causes deranges the parts, and again deranged parts disturb the nice adjustment of the whole, and utter disorder ensues. Sometimes impaired action is noticed, with no manifest change of structure, or apparent modification of the sustaining forces of life. By a little examination it is seen that these apparently irregularly disordered actions and changes frequently fall into groups capable of being distinguished as peculiar, thus forming natural families with subordinate divisions. Each group attended, in the main, by special changes in the material constituents of the body, and preceded or accompanied by particular conditions, becomes as definite an object of study as newly discovered species of plants or animals, or new elements or compounds developed by the manipulations of the chemist.

Here and there a group may baffle even expert pathologists, and become a *questio vexata;* just as botanists, zoologists or chemists may have difficulty in assigning a habitation and name to some refractory members of their usually orderly families.

All questions here are upon the facts, to be settled as in all studies of nature by reference to the senses and their report. The subject matter is not within the appropriate range of hypothesis or theory; the laws of strict induction are here indispensable.

Theory may include all known facts, and hypothesis may apparently account for them, but to establish a law it becomes necessary to prove that the relation of the facts is not only general but *essential*. Theory can govern no farther than the instances actually examined and included, whereas a law invariably includes all the vast number of unexamined instances.

Thus, of the great number of theories invented since time immemorial to include the causes of disease, and the changes involved, it is sufficient to say that they were the product of a knowledge of facts merely without instances contradictory, which may be almost innumerable, and yet the systems based upon them be liable to overthrow at any moment by the discovery of new facts. And indeed this may be freely admitted to be the case with all preceding and all present theories upon this subject; nevertheless the discovered facts remain unchanged, and many of them have been referred to laws that can no more be shaken than any other demonstrated laws of nature.

The signs by which disease is discovered are daily becoming more accurately defined; fanciful distinctions are being discarded, and real ones pointed out; causes are being investigated and made known; changes in structure and action are progressively detected with greater minuteness; and thus pathology advances with steady step to the goal of scientific perfection. To this general statement, it is no objection to urge that in many details there is a complexity which, thus far, has eluded analysis. The wonder is, not that so much remains mysterious, but that in such a confessedly obscure subject, so much has been wrested from the domain of ignorance and darkness. Consideration of what is really known upon this topic, notwithstanding the tortuous path by which discovery has wended its way, may well impress the sentiment:

> "Trust not the frantic or mysterious guide,
> Nor stoop a captive to the schoolmen's pride;
> On nature's wonders fix alone thy zeal,
> They dim not reason."

Acquaintance with the branches of medical science adverted to will infallibly suggest numerous particulars, observance of which will ward off or prevent the incursions of disease. Practically the whole art of Hygiene springs as naturally from them as a tree from its roots.

Thus far, Gentlemen, you will perceive that I have made no allusion to the use of artificial curative agencies, whether medicinal or surgical. Indeed, it is quite possible to perform the higher parts of a physician's duty without recurring to special medicines; those who suppose that the art of medicine consists solely, or even in greatest part in the administration of drugs, entertain but a limited conception of its real character. And as it is precisely here that the greatest discrepancies of opinion occur, you will readily perceive that you have enough to occupy your time and attention for a long period yet, before you will reach the debateable regions of the science.

Oportet discentem credere—oportet edoctum judicare—is a maxim emphatically true in medical science. To be able to form opinions of any value you must stand upon a level with, or above, the facts. This is the simple, common sense reason, why what we call the regular or scientific physician will not stoop to hold controversy with the manifold shapes of quackery and charlatanism, in which ignorance vainly disguises itself. Not from any unwillingness to acquire new truths, but because opinions or doctrines based upon knowledge of a few, or perhaps upon no facts, though they may happen to be true, are infinitely more likely to be false and absurd.

Many persons seem to think that it is a mark of weakness not to have a full fledged opinion, upon any subject that is brought to their notice. They will decide the profoundest questions in ethics, politics, law or medicine, with an oracular assurance, which proficients in either of these departments of inquiry will strive in vain to acquire. I need not say to you that, as students of the recondite sciences collectively styled medicine, such self confidence is unworthy of you. As Lord Bacon suggests, you can no more enter this earthly kingdom of knowledge, than the celestial kingdom of Heaven, without first becoming as little children. Your minds must be ready to receive truth as propounded. If you are deceived by your instructor, wittingly or unwittingly, the chances are thousandfold that this will be less frequently repeated, than if you undertook your own guidance. It is a proverb among the lawyers, that he who undertakes to conduct his own case has a fool for a client, and the professional student who at the outset of his career determines to follow the uncertain lead of his own abortive notions will, sooner or later, find that he has undertaken a task which does more credit to his will than to his judgment or understanding.

Thus, upon the immediately practical branches which will here be taught, it must be insisted that they be fully received

for your present guidance, whether in the practice of medicine, of surgery, or obstetrics, until after having acquired a competent acquaintance with all the necessary preliminary facts, you become qualified to rear the superstructure of your own opinions upon them. And in this connection the second proposition heretofore laid down becomes immediately important.

If your general education thus far has been properly conducted by your several preceptors, you have been taught how to use the mind in the acquisition of knowledge. Incident to the discipline required for this purpose, you have acquired some little store of knowledge. You have received many facts and principles likely to prove of direct service to you, but a large proportion of your studies have not had this object. Strength, and knowledge how to use it, have been the purpose.

If you have been conducted into the higher realms of mathematical study, it has been not that you should bring thence materials for every day use, but that your minds might come back firm, and exact and strong. If you have been led among the works of classic times, and devoted many toilsome hours to form an acquaintance with the languages in which they are written, it has not been that you may interlard your written or spoken words with choice phrases from comparatively unknown tongues, or that you might use them for every day's service, but that you might acquire keenness of perception, sharpness of discrimination, power of analysis, clearness, copiousness and accuracy of expression—faculties which may be cultivated by other means, and in which individuals may naturally differ, but which the experience of the world has shown to be peculiarly advantaged by this particular method. And so when you enter upon a course of study in the medical college, a very large proportionate object is, that you may be taught how best to employ your faculties in the future attainment of medical knowledge. We of the corps of instruction shall gladly point out what we believe the right and true path, accompany you a little way along its course, and then bid you God-speed. We shall do our best to instruct you in the facts of the science; we shall do our best to instruct you how to put them together and make use of them; how to think of them; but we forwarn you that then comes your own struggle, from which there can be no escape.

Per aspera ad astra is written all along the path of human endeavor. There is no royal road to knowledge, either medical or other. There is no cunning device of man, no adroit mechanism, no shrewd and shapely plan or scheme or programme which may be conceived, or written or printed, which will relieve you, or any other man or men, from the necessity

of struggling and toiling and working, if you would ascend upward toward the temple of knowledge. In these latter times we hear much of adroit methods by which "knowledge is made easy." To hear some men, even of our profession, talk, and to read their writings, you would half expect that, by means of cunning methods of reform, the whole science of medicine could be wrapped up in a yellow-covered pamphlet, and, like "French without a master," be imparted in "six easy lessons."

On the other hand, there are those who would undertake to convince, that the advances in our profession have been such within the latter years, that it is a hopeless task for the student to undertake to acquire an acquaintance with them by any of the means which have hitherto received the sanction of the medical world. A new and royal road must be constructed—a kind of railroad to the hill-tops of knowledge—upon which the medical neophyte may take passage at a low rate of fare, and by the aid of numerous conductors, engineers, brakemen and switchmen, be conveyed to the *ne plus ultra* of medical wisdom —*cito, tuto et jucunde.*

With the ideas in the ascendant which we have heretofore laid down, you will at once perceive that with such fancies as these we have no sympathy—no affiliation.

How much that is indisputable and necessary to attainment, we have endeavored briefly to indicate. This is, always has been, and always will be true. There is no more of a burden laid upon the shoulders of this than of any preceding generation. Neither is there any less, nor will there be. Science has advanced with wondrous rapidity within the years that are past, but we have neither more nor less to acquire than our fathers had. It is a peculiarity of science, that while it is constantly accumulating to itself, it is also constantly separating from itself. The worthless, the cumbersome untruth is cast out as effete.

Take any branch of science you choose, and observe its method of advance, and see if this be not true in general and detail. I have sometimes thought truth might be compared to the statue within the as yet untouched block of marble—all that is wanting is for the master's hand and chisel to remove the rough and worthless material about it—to remove the surroundings which hide and smother it. And thus here in medicine, we glory in the fact that the advances made are not so much in the accumulation of rubbish which has to be removed and piled away by the pupil, but rather consists in actual removal of the rubbish, and more distinct approach to the truth in its simplicity.

And here I cannot forbear to suggest another idea which occurs to me, although it may appear to have a wider scope than the topic directly under consideration. It is this. Old and tried methods of acquiring knowledge which have stood the test of all varieties of innovation and attack, and which have, confessedly, produced such an intellectual and scientific harvest as the world has never before seen, ought not to be discarded or denounced, unless in favor of new methods of unquestioned and unquestionably great superiority. The danger is too vast to be incurred without positive promise. Confining this idea to medicine, and I must be allowed to observe that the present state of the science, and the brilliant catalogue of names of high worth, distinction and promise, which it presents to our view, whilst they may well cause our hearts to thrill with exultation at the success attained, inculcate, in the most impressive manner, an imperative caution lest we open the door to causeless innovation, and instead of "elevating the standard," we "hang a banner upon the outer wall," which shall speedily be prostrated amid utter confusion and turmoil.

I have stated that an acquaintance with the operations of other men's thoughts on this subject is important to the student. The advantage of this is twofold—it teaches what to do and what to avoid. Although the minds of men are not identical in action, they so far resemble each other that we may reason from one to the other with very great certainty. There is not an error afloat at the present time but what has its prototype upon the page of history. Perhaps we may say that there is not a truth now received, but what a more or less clear or dim apprehension of it has occurred to minds long since departed.

Many an inventor, ingenious, sagacious, skilful, has wasted his life in attempting combinations which a brief visit to the inventor's room at the Patent Office would have shown him to be fruitless, or, at the best, previously anticipated. And thus in the history of medicine we have a museum replete with instruction. Here you may derive hints which shall guide you to great discoveries—here you will find wrecks and beacon lights which shall preserve you, not only from attempting the impossible, but also from attempting the possible by impossible methods.

Here you will find thickly recurring evidences that that genius, so much coveted by men in general as enabling them to clear by single strides the long and tedious road of study, in far the greater proportion of cases has proved a bane to its possessor. The pages of that history will convince you, if nothing else will, that distinction, whether in the science or art of medi-

cine, in the vast majority of cases, is due not to genius, not to especial advantages in the paraphernalia of education, but to a constant, assiduous devotion to the acquirement of knowledge and the cultivation of right modes of thought, so as to know the proper use to make of it when once acquired.

We invite your attention, Gentlemen, to difficult studies, vast in extent, varied in character, and yet, by the peculiar nature of the subject, acquaintance with each is indispensable to correct knowledge of either. For, let me forewarn you, that although for convenience, and of necessity, we assign particular branches to individual instructors, yet this division is almost wholly arbitrary—the parts are all of one body. Hence it is that instruction upon them is carried on, in point of time, as nearly concurrently as possible. Separation of these departments from each other, whether elementary or practical, is much like the Egyptian method, which appointed a medical custodian for each member of the body, and precluded each from meddling with the province of the other. Oftentimes the patient died, and all Egypt was startled to find that, as in case of railroad and steamboat accidents at the present time, the verdict of the doctors sitting each upon his particular organ, was, "None of these to blame." One prominent advantage of the usual lecture system adopted in this country is, that by this course we are enabled to keep the body of the science together, you are not obliged to gather up its mangled fragments, scattered along a couple or more of years.

Those of you who are attending the medical course for the first time will obtain a more general view, which will guide your studies to better advantage, which will suggest to you what points are especially noticeable and important, and when next you meet with the instructors of this, or some other college, you will be enabled to advance from generals to particulars, and with proper diligence will readily grasp and retain all or nearly all, that your teachers have opportunity to convey. And you need not fear to acquire everything which can be possibly imparted in the medical curriculum—you need not fear lest having overcome everything here, like Alexander, you must weep because you have no other worlds to subdue!

Above and beyond all this, you will have an open field for the exercise of every energy, of every faculty you may possess. The particular mode of imparting instruction usually adopted by the medical colleges of this country, and also throughout Europe, although it has been sharply inveighed against, and attacked from various quarters, we must still believe to possess peculiar and marked advantages.

Oral instruction, as communicated in the lecture room, calls into active exercise the faculties of attention and perception—faculties of the highest importance to the future practitioner as well as the student. A few weeks' experience will prove to you that the discipline thus afforded is of the most valuable character. At the outset, perhaps, you may feel discouraged, possibly disheartened, at the idea of attempting to follow along with the rapid procession of truths which will, hour after hour, and day after day, be moving on and on. But let me reassure you, and call for the testimony of those who have gone before you in the same course. The task will daily become easier, and before the lapse of one-third or one-half the session, you will find it a matter of little or no difficulty.

There is an intimate relation which gradually becomes closer and closer between the lecturer and his class—scarcely to be explained by words or philosophy, but every teacher, every student readily appreciates it. The instructor in communicating knows whether he is understood; he can read his own thought mirrored in the eyes, photographed upon the features of his auditors. If that mirror fails to reflect the idea, if that moving feature fails to give back the form thrown upon it, the object will again and again be held up till the mental light has fixed it forever. Here books fail—here the speaker triumphs. And the triumph is not his alone, for the new idea gained is the student's victory also—it is one step further toward the ultimate goal of knowledge—it is another assertion of the supremacy of man over ignorance and folly and delusion. Count me the value of a single truth, and I will multiply it for you into the sum of all values which separate the civilized and enlightened Anglo-Saxon from the Hottentot of the Cape!

And permit me to say, Gentlemen, in this connection, that even the number of lectures to which you will daily listen are so apportioned as to meet the best uses of the mind in discipline. Six lectures a day, of an hour each, are no more than a healthy and moderately well disciplined mind requires to bring out its true power. Science brooks no indolence in its votaries, and slow movements are abhorrent to fleet stepping truths.

It is not the mere acquirement of knowledge which is wanted—it is something more—it is culture and power. A Hercules is not brought to his full stature by careful feeding, nursing and seclusion from effort. Athletæ are not so produced. Muscles must be exercised daily to their utmost in order to full development, and so must brains. The oak may thrive in a hot house, but it will lose many of its most admirable characteristics. If it would bid defiance to the storm, it must from its infancy be *subjected to the storm*, so that its roots

shall sink deeper, and take firmer hold upon the soil and its rocky substratum.

And so of the human mind, if you would have it developed into all the majestic proportions of which it is capable, you must, from the earliest dawn of its development to the final hour, tax all its energies, all its capacities.

Pressure is what is needed—collision with all the wants, anxieties, ambitions and cares of life. Troublous times and imminent crises in the affairs of nations produce harvests of great men—"piping times of peace," luxurious ease and philosophic retirement, straggling weeds of littleness only. None of you rightly know what you can do until stern necessity, or fierce ambition, compels to the effort; and you are angels, and not men, if you do what you might without.

My friends, have you ever thought what this human mind of ours is, or even what it is like? Have you measured its capacities, and marked the limit of its growth? Have you ever thought that from the cradle to the grave it grows unceasingly, and commands to itself the servitude of all of existence, whether seen or unseen, from the next material object to the coming light of the farthest star?

The scriptural injunction is not only to do certain things, but "whatsoever thy hand findeth to do, that *do with thy might.*" Put all your power, not only of muscle, but of heart and brain, into the work.

We expect, Gentlemen, to fill up all your time with work. We do not call upon you to idle away an hour; we propose to ascertain what manner of men you are. We want for this profession of ours recruits that not merely understand tactics, but are capable of drill and service, with iron muscles and active brains. Let the sick men and the children, who cannot keep up with the grand army, fall back into the rear with the women, the sutlers and the baggage.

And the history of the profession bears us out in the doctrines we advance. Who are the stars of the profession in this country and throughout the world at this hour? Those who feebly complain that too much labor was imposed upon them during their pupilage? Not one—not one! But those who wrought with a will at the work before them, and rejoiced at the very burdens imposed. This is the only way to bring out the true man. Why, you can only get at the truly gigantic force of steam when you bear it down and put your weights upon it, cage it up in iron walls and put fire under it—then you will find the secret of its power, and, wo to the unlucky wight who does not "look out for that engine when its bell rings!"

Very well intentioned gentlemen, easy going gentlemen with

pens in their hands and crotchets in their heads, in very good and grammatical English, and in very bad and ungrammatical attempts at English, have duly expressed their profound concern at the dubious character and prospects of the rising medical generation. The nervous system of this new generation is too delicate to be subjected to the stern labors and rigorous processes which their fathers endured. Indeed, it has become quite a fashionable mode of securing reputation as a sage, to diagnose in the bodies of juvenile candidates for the profession weaknesses which must preclude them from undergoing that discipline which made their fathers staunch and strong. We do not so believe—for the credit of manhood we will not so act.

Haud inexpertus loquor—from my own personal observation I am ready to give evidence, that the number of lectures *per diem* here given is not only not too much for the student, but, taking the average, it is much better for him than any less number. Let the profession give testimony. One other point, in this connection, by way of explanation and encouragement. The different branches of medical study are so intimately related to each other, that they mutually facilitate clear understanding and recollection. Thus, of the large number of facts which will day by day be brought to your notice, a very large proportion will actually serve as helps to the memory in retaining the others. This is peculiarly the case with observations in clinical practice in the various hospitals to which you will here have access, and in the variety of cases which will from time to time be brought before you in this building. To use a homely figure—each case will furnish you a string upon which you can collect in one view many important facts, anatomical, physiological, pathological, therapeutic or surgical, as the case may be. The clinic will thus afford you a faithful and reliable mnemonic chart, infinitely preferable to the absurd and unphilosophical schemes which mere memorizers are so constantly inventing. For, after all, the clinic is the soul of the body of instruction—our art and science culminate in the cure of disease.

You are to look upon hospital and other observation, therefore, not as adding to your labors, but as facilitating them. Few persons seem to understand the true import of the faculty of memory. We hear many complaining of the want of this power, and we are often ready to complain of its exuberant manifestation. May I venture to impart a secret? That which is thoroughly mastered and understood cannot be forgotten, and on the other hand, that which you can neither master nor understand, had best be forgotten as speedily as your mental constitution will permit. A muddy, half concep-

tion of a truth is worse than none at all, and it is notorious the world over, in all points of belief, that no doctrines are so strenuously adhered to, however absurd in themselves, as those which have some shadow of truth in their foundation. The meagre half-truth, after a very aboriginal fashion, is made the vehicle or trumpet of a horde of plethoric falsehoods.

Need it be said that a clear apprehension of the facts and principles which you will here be instructed in, will forever preserve you against falling away into the belief or practice of any of the multitudinous varieties of medical delusion or imposture with which the world is full?

I congratulate you, Gentlemen, that you have commenced the study of a profession wherein is permitted the most complete independence of thought. We have here no edicts which control unalterably, save those which science itself imposes. You are free to think and judge in medicine, as in any of the natural sciences—no more, no less.

And yet we are proud to assure you that ours is a conservative profession. The new fact, or new principle, which would find place in our creed, must come thoroughly demonstrated and proven by all the tests which modern science affords—no more, no less.

Whilst we have signed a declaration of independence against ancient dogmas, we nevertheless refuse to be dragged as willing dupes at the chariot wheels of every loud-voiced imposture, although it labels itself upon its brazen forehead—*Progress*. Asserting freedom, we avoid that anarchy of opinions wherein we should neither be governed by others nor by ourselves.

Of this anarchy of minds there are, alas, multitudinous examples in these our times, beset with changes which are progress, and changes which are not progress, but a miserable retrograde towards barbarism.

The street corners are vocal with noisy declamation of pseudo-reformers; the books and newspapers overflow with the inky diatribes of those who would re-create the world after models which it would be no sin to worship, being unlike anything in heaven, on earth, or in the waters under the earth. It is an unfortunate fact, that many truths in government, religion, science and art have only been received after great opposition, by the world, and hence at the present time, there is not an impudent quack or arrant knave, tampering with either of these, but congratulates himself on the kicks and cuffs he receives from all sober-minded, thinking men, because he can use them as arguments that he too is a great reformer, very badly treated, and therefore in the right!

Poor old Galileo was sent to prison because he saw fit to

make use of the earth's revolution upon its axis, as an argument against certain doctrines of the Church; and now there is not a pestilent disturber of the public peace, there is not an absurd fanatic, there is not a meddlesome demagogue, there is not a noisy mountebank, but when derided for his folly, dashes his heels against his ricketty wheelbarrow of notions, and *a la* Galileo, exclaims—"It does move, anyhow!"

Something more than opposition is required as a test, whether of truth or falsehood, as many in these days are beginning to find to their cost.

You may be independent men, but to be truly so, you must first be studious and thinking men. The mandate has come down from the earliest dawn of time, by the sweat of man's brow shall he live—live corporeally, live intellectually, live spiritually, and wo to him who disobeys.

Nor is there any real hardship in this, as the indolent and slothful imagine. Obedience to this law of our being converts the primal curse into a perennial blessing. The sluggard is but one remove from the vegetable—the earnestly industrious man advances day by day with ceaseless progression towards the attributes of the Divine.

It is work, effort and toil which have mapped the continents with cities and towns and hamlets; which have replaced the wilds with cultivated farms, and the void deserts with all the arts and busy hum of civilized life; which have "spanned the rivers with great bridges unknown to our fathers;" have traversed the seas with sailless ships; have covered the earth with railways and telegraphs; have carried the sciences to a meridian splendor, and have made man truly—"In action, how like an angel! in apprehension, how like a god!"

It is a proud reflection, Gentlemen, that our profession has always occupied a distinguished place in the van of the world's onward march. All along the glorious catalogue of those whom the grateful ages "will not willingly let die," the names of medical men glitter as "bright particular stars," and, to-day, no higher homage of admiration and respect is paid to any other than those which our profession claims as its chosen ones.

Disappointed aspirants for fame on the basis of slight attainments and pauper intellects—misanthropes overborne by dyspepsia and hypochondria—enthusiastic dreamers of Utopia—these and the like may ventilate their ululations over the degradation of the profession, but to these we have no response save an indignant denial of both their premises and their conclusions.

We welcome you, Gentlemen, to no degraded position, but to one which of itself merits and receives honor, and to which we trust you will hereafter bring additional reasons for popular confidence and respect.

Beyond this we may say, that in the professional ranks you will be allotted a place entirely commensurate with the intellect, culture and acquirement you bring with you. On the progress you here make in medical science will depend much of your ultimate success. Endeavor to lay the foundation broad and deep, that you may build vast and high. Aim at a clear understanding of the subject, rather than mere memorizing of details. Seek strength and solidity rather than words and phrases. The time will come when the parrot tongue will not answer—*brains* must have to do with the work. The alphabet and the dictionary must be passed by for the book which may be known, and read of all men.

To whatsoever we, your temporary instructors, can do to advance you towards eventual and deserved professional success, we bid you earnest, heartfelt—Welcome!

EDITORIAL.

LEGAL MEDICINE IN ENGLAND AND IN CHICAGO.

Thomas Smethurst was recently tried and sentenced to be hanged for the murder of Miss Bankes. This sentence has been commuted, and he is to be imprisoned for life.

We learn from the *Lancet* that the moral evidence of his guilt was thought uncertain, and that the testimony on which the charge was founded was that of Dr. Alfred Swayne Taylor, author of a standard work on medical jurisprudence, who, on the *inquest*, testified that he found arsenic in the contents of one of the bottles found in the possession of Smethurst. It was this testimony which virtually condemned Smethurst before the trial.

"On application to Brande, this veteran chemist suggested that possibly the copper wire guage used by Dr. Taylor might have contained arsenic." "Such was found to be the fact when the copper used for testing was in turn tested." Such a mistake is naturally calculated to cast doubt upon the value of

Dr. Taylor's authority as an analytical chemist. There are, however, other facts calculated also to throw discredit upon his correctness.

He says, in the late edition of his work, p. 694, "A man may die from strychnia and no trace of it be found in the body." Mr. Taylor makes this statement apparently as a defence of his position in the case of Palmer, in which he testified to finding no strychnia. But it is now known that Dr. Taylor is in error in stating that strychnia passes quickly out of the tissues. Messrs. Rogers and Girdwood (*Lancet*, for Oct., 1859) have "demonstrated a singular persistence in their original shape long surviving the processes of decomposition and putrefaction in the tissues with which they are immaturely combined," of strychnia and other poisons.

Again, Taylor says, "Curara, which has, when swallowed, but a slight action, would, however, give the chemical relations of strychnia in the stomach," *op. cit.* p. 680. If this be so, there is then no distinct test for strychnia. Not being a chemist, we were unable to go into this subject fully, but the facts we have stated. The error into which Mr. Taylor fell in quoting the testimony in the case of Green, led us to believe that where human life and reputation are at stake, better chemical authority than Dr. Taylor should be demanded.

Are the analyses generally furnished in such cases more reliable? We fear not. The public authorities in this city generally go on the plan of economy, and the cheapest doctor has generally been employed to make post mortem examinations the coroner, and no chemical examination is sought except in cases like that of Greene, where public opinion demands it. In case of need, we have the satisfaction of knowing that we have a chemist who is capable, laborious and conscientious, whose skill is unquestioned, but the public authorities would never think of giving him *carte blanche* in a difficult case. We see it stated that in the case of Stephens, Prof. Doremus *received* $3,000 for the analysis, and $600 for a new apparatus.

We deem it a duty, as it is a pleasure, to say that the analysis of Dr. Doremus in that case is more perfect and satisfactory than any other of which we have knowledge, either in Europe

or America, and it must be no small relief to a court and jury to be able to have such evidence on which to base their action.

Lest this reference to the public authorities here should be misunderstood, we deem it proper to add that it has no reference to former or present public prosecutors, who are capable and indefatigable.

But the case of Jumpertz, in which the theory of the prosecution was, that death was caused by poison, and in which the public authorities had the whole of the body in their hands (except the viscera), and in which, so far as is proven, no chemical examination was demanded, exhibits an ignorance, or a negligence somewhere, which shall not be passed over in silence. If, as is contended, Sophie Werner was poisoned by Henry Jumpertz, with arsenic, strychnia, or any ordinary poison, that poison still exists in the decomposed tissues of the body, it can be brought out, and made visible to court and jury.

Will it be done?

PROF. BRAINARD:

Dear Sir,—In compliance with your request that I would examine the remarks of Mr. Alfred Taylor, in his last edition of his work on Poisons, in reference to the case of Greene the banker, indicted and convicted in this city in 1854, for the murder of his wife by poison, I send you the following:

The extract referred to will be found on page 696 of Taylor on Poisons, American edition of 1859, and is as follows:

"At Chicago Circuit Court, December, 1854, and January, 1855, G. W. Green, a banker, was charged with the murder of his wife by strychnia. He had been married for many years, and the general evidence showed that he had latterly maltreated the deceased. It seems that she died suddenly while in apparently good health, and no person witnessed her death. The prisoner assigned the cause to cholera, and made some contradictory statements. An inspection of the body by Drs. Myers and Freer, revealed no cause of sudden death; there was no disease. There was lividity about the throat and eyelids, the tongue was protruded, and the limbs were in a rigid state. The stomach, intestines and brain were healthy; the lungs and heart were also healthy; but the heart was empty, as well as

the great vessels near it. Dr. Blaney, a chemist, deposed to finding strychnia in the contents of the stomach of deceased. He employed Slas's process, and estimated that the whole quantity which he found amounted to the twentieth part of a grain. He used the color tests, and, having produced some of the crystalline matter in court, he applied the tests for the satisfaction of the jury; one gave the result indifferently and the other not at all. The crystals had a bitter taste. It proved that in the drawer of a bureau, of which the prisoner had the key, strychnia was found; and it is stated, that in the same bureau quinine was kept, which deceased was in the habit of taking for ague, from which she suffered. It was also alleged that deceased herself had used strychnia for poisoning animals. The defence, therefore, turned upon the possibility of deceased having taking the poison (if taken at all) by some mistake, for quinine. Nevertheless the prisoner was convicted. A new trial was moved for and granted.

There may have been other facts of a moral kind, which led to the verdict in this case; but, viewing them as they have been here reported to me, there was a failure of the medical evidence to show that death was caused by strychnia. Nothing was known concerning symptoms; the appearances were of a negative kind, and the chemical analysis, admitting it to its fullest extent, merely proved the evidence of a medical dose of strychnia. In fact, but for this chemical evidence, there would have been no case against the prisoner, and this evidence, in a scientific point of view, was not satisfactory."

It will be observed that Mr. Taylor here makes a wholesale charge, that the conviction was made on insufficient evidence, and also that "this evidence, in a scientific point of view, was not satisfactory." It is the latter charge mainly that we wish to notice.

Any one familiar with the trial of Greene will notice in this statement several important errors, and equally important omissions; and hence it conveys impressions unjust to all the parties concerned in the trial. It is to be deplored than an author of such reputation, and claiming to be an authority on medical legal subjects, should permit himself to pass judgment upon a respectable court and jury, without taking the trouble to inform himself correctly of the facts of the case, especially when it was in his power to do so with but little trouble. He has obviously had his information from some second-hand

statement, or from some incorrect, condensed and unauthorized publication of the evidence—such a course cannot but throw doubt on the credibility of his statement of other cases, and depreciate the value of his work as authority. He that attempts to criticise should see that he is not himself subject to criticism.

The first omission of importance is in the statement of appearances after death, viz., that the stomach was filled with food of a recently injested meal, which negatived the theory of the prisoner, that death was the result of cholera, and also the hypothesis of an irritant poison.

In the statement of the chemical evidence, my written report, which was admitted as evidence, and which gives more fully than the oral testimony the various tests, *is not noticed.* Had the author examined this, he would have found that every color test acted distinctly, as made separately and side by side with a known specimen of strychnia. Also that the crystalline forms of the strychnia obtained from the stomach, as examined with the microscope, was the same as of true strychnia. That the chemical habitudes with solvents, of its salts with acids, its bitterness, etc., were all corroborative of the color tests. That these tests were frequently repeated by myself, and in the presence of other parties, and *invariably acted characteristically.*

In regard to the statement of the tests applied in court, there is an important error. He says, "having produced some of the crystalline matter in court, he applied the tests for the satisfaction of the jury. *One gave the result indifferently, and the other not at all.*" This is false in fact. The tests did act, and that distinctly. It is true that one of the tests when applied to a *very minute* fragment of a crystal, though giving the proper color, was so evanescent that time was not allowed to pass it round the jury; but in that case, the *author fails to state* that, on repeating the trial with a larger quantity, *it was strikingly distinctive.* This is distinctly stated in the published evidence. Why does the author not give the whole of the facts? Why does he repress the fact of the repetition of the test when he states the failure in the first trial? Obviously he was not in possession of a true record of the evidence, or his perusal of

it was less studied than it should have been, to do justice to the court or the witness.

Certain important omissions occur also in the narrative of the moral evidence, which I have not space to notice, but which acted strongly with the jury.

He states "a new trial was moved and granted." This is not true; the new trial was *refused*. The case was carried up to the Supreme Court, and before decision, *the prisoner hung himself in his cell*, not having been sentenced.

He states that the chemical evidence "merely proved the existence of a medicinal dose of strychnia"—having previously stated that I had estimated the quantity found amounted to the twentieth of a grain. He does not state that my impression was, that I had a larger quantity, but, upon being urged in cross examination to swear to having found a specific quantity, I would not state explicitly that I had more than that amount. The poison was obtained in separate parcels, and I feared to collect them together to weigh them, lest there should be a loss of a part of it. This appeared in evidence. After all, the statement that there was only a medicinal dose discovered, when all circumstances was considered, is but special pleading. It was in evidence, that the contents of the stomach only were operated with, none of the blood, or the tissues remote from the stomach, were included in the analysis. Hence, on the assumption that death resulted from the poison, that portion which produced death, having been removed by absorption, would not be found in the stomach.

Again, the quantity of the contents was over half a pint, and a heterogeneous mixture. Stas's process, as the author well knows, is long and complicated, requiring numerous solutions, filtrations and washing of the residues. Hence, it is scarcely to be expected that the whole quantity of the strychnia could have been eliminated in a sufficient state of purity to give the crystalline form distinctly, and all the color tests. Would Mr. Taylor expect to obtain the *whole* of a medicinal dose of strychnia in the contents of the *full* stomach of an individual who had died from any cause immediately after its administration? Is it reasonable to presume that the medicinal dose was

taken by Mrs. Greene immediately before death, or, if so, that I obtained the whole of it? Is it true, then, under all the circumstances, that the chemical evidence "*merely* proved the existence of a medicinal dose of strychnia."

Sufficient, I hope, has been said, to show that, to say the least, Mr. Taylor has been exceedingly remiss in his duties as an author and critic, in his review of the case of Greene.

Yours truly, J. V. Z. BLANEY.

SURGICAL NOTES.

1. *Vesica-Vaginal Fistula.*

This operation was performed on the 24th Sept., with the assistance of Profs. Miller and Ingalls and Dr. Durham, on a woman, 24 years of age, delivered of her first child by instruments, above four months previously. The fistula was large enough to admit the finger into the bladder. The vagina was drawn into bands and contracted in different directions, particularly at its orifice.

The operation was performed in the manner used at present. We have been in the habit of using the lead wire for patients long before Dr. Sims performed his operation, and as it always succeeded in favorable cases, we were not disposed to abandon it.

However, in this case we used the silver wire, and found it to answer in every respect as well as the lead, and in one important particular, better. It remains longer in the tissues without producing ulceration. Five stitches were used, the needle being introduced by the instrument of Matthieu, instrument maker of Paris, (whether invented by him or not we are unable to say.) Although the catheter left in the bladder was once obstructed, and once drawn out by accident, the operation succeeded perfectly, and three weeks after the operation the opening was closed, but the sphincter did not resume its function. There was also paralysis of the left foot, which dates from the time of her delivery.

2. *Resection of the Knee Joint.*

In the No. of this Journal for July, 1858, we reported a case of this operation on a boy for caries. In the No. for June, 1858, the sequel and ultimate result of that case are given. It was entirely successful in preserving a useful member.

About the first of March last, we performed the operation on a boy about twelve years old, for caries. This was an unfavorable case on account of the extent of the disease, and from the boy having had previously a fracture of the femur of the side affected, which had united with considerable shortening. We propose to give the result of this case at some future time, when the usefulness of the member shall have been fully ascertained. We have already referred to it in a note to the discussion of the Society of Surgery of Paris, on the subject. At present we are able to state that the boy is in good health, that full bony union and in good position has taken place, and there only remain these small fistulous openings, through which a few drops of pus are discharged daily.

On the 5th of October, 1859, we performed resection of the knee for ulceration of the cartilages and disease of the bone, at the City Hospital, in presence of the medical class. Two and a half inches of the femur and the articular surfaces of the tibia were removed. This patient was much reduced, and after the operation was greatly depressed, but reacted the third day. At present he is doing well, the wound of skin is healed, except at one point; he suffers no pain, and there is but a small discharge of pus, which is healthy.

3. *Congenital Absence of the Vagina, with imperfect development of the Uterus.*

Since the report of cases of the No. of this Journal for July, 1859, we have been consulted in behalf of three patients affected with this congenital defect.

On one of these the operation was performed, Sept. 24. Professors Miller and Ingalls assisted. The patient was twenty years of age, and had been married three years.

There was full development of the breasts and external organs of generation. Pain occurred at regular monthly intervals.

By examination *per rectum*, a body was felt in the situation of the uterus, having the characters of that organ when imperfectly developed. The vagina was closed at the orifice and throughout its whole length. The operation was performed in the manner described in the article referred to. No difficulty was found in forming a passage sufficiently large to receive a large sized oval pessary without opening the bladder, rectum or peritonæum.

No dangerous effects followed. The final result cannot as yet be judged of, but will be reported when sufficient time shall have elapsed to enable a correct judgment to be formed. In the meantime appearances thus far confirm us in the opinion heretofore expressed in favor of this operation.

PROSPECTUS OF THE CHICAGO MEDICAL JOURNAL FOR 1860.

This Journal will be continued in its present size and form. It will embrace—

1. *Original Articles*, of value; communications from former contributors, and others are earnestly solicited.
2. *Book Notices*, embracing such mention of all important works as will enable our readers to form a correct estimate of the value of each.
3. *Selections* of interest from American and foreign journals.
4. *Editorial* on subjects demanding notice.
5. *Miscellaneous Medical Intelligence.*

It will be the object of the editors to make the Journal valuable as a scientifie and practical work, rather than a medium for discussion of medical politics.

We must here invite the attention of our subscribers to the importance of remitting our dues promptly. While a large number have already complied with our terms, there are, we regret to say, still many, well known to us as honorable and responsible gentlemen, who remain indebted to the Journal for one or two year's subscription. We respectfully and urgently solicit of these their immediate attention to this subject.

Terms, $2 per annum, payable in advance; if not paid within three months from the commencement of the year (April 1, 1860), the price will be $3.

The Surgical Clinic of the College will be held on Saturday afternoon of each week at the College.